
THE BEE LINE

The Newsletter of the Oregon State Beekeepers Association

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Bees and Tents

Dr. Gerald Loper and Dr. Jerry Bromenshank
(a summary of the presentation by **Dr. Loper** at the
Northwest Corner Fall Conference)

Dr. Jerry Bromenshank has been unique in designing and conducting experiments with grants from other Federal agencies, especially the EPA, and more recently a Defense agency. As I understand it, his goals are at least three-fold: 1) to discover what bees do, 2) to enhance the researcher's ability to electronically monitor and document what they do, and 3) to enable beekeepers to better manage bees to enhance profit (especially remote monitoring of beehives and apiaries).

As electronic parts have become better, cheaper and smaller, Dr. Bromenshank has been designing (and will be testing next year) devices that could monitor hive activity, including weight gain/loss, and telemeter that information directly back to his office. He foresees getting these devices cheaply enough so that beekeepers could economically use them to monitor conditions, especially at out apiaries, saving the expense of driving long distances unnecessarily.

As part of a recent Defense agency grant, a lab in Oregon and I (Dr. Loper) in Tucson have been measuring electrostatic charges on bees under different conditions. The charges are very, very small. In Israel, researchers have been documenting that pollen can "jump" from anthers (negatively charged) to bees as they get very close (but not touching). This happens only when the pollen grains are light and dry. It is also possible that pollen can

"jump" the other way – from bee to stigma – under the right conditions.

I found that bees in my tents, in very dry environmental conditions, had an average charge of 37 pico columbs (very small) and that there was a greater charge on bees that had flown further.

Honey bees have been used to distribute pollen placed at the entrance to enhance pollination (enpollination) but they have also been used to distribute bacterial and fungal spores to help control plant diseases. Likewise, bees have been accused of spreading fire blight in pear orchards, but recently they have been used to **find** fire blight before the disease was obvious, so now they are "disease detectors!"

We have not been very successful in getting bees to fly preferentially to, and improve pollination of, specific crops. Various Nasanov gland formulations have been tried: "Bee Scent," "Bee Here," etc. Even queen pheromone has been sprayed on various crops but with little or no economic response. However, this remains one of Dr. Bromenshank's goals.

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President's Notes

by Ray Varner

This year's Northwest Corner Fall Conference has got to be one of the best ever. My sincere thanks to VP Dave Graber for his incredible efforts in putting it all together. We appreciate those of you who offered to be on the committee for next year's Conference. Dave has learned the ropes and will now be going for the team effort approach.

The team approach will be pursued this next year in a number of areas. People are burning out and getting tired, and if they quit they take valuable experience and knowledge with them. Phyllis Shoemake's position is an example. Phyllis has indicated that she would like to retire next year, and in the interim work on training a replacement. A job description will be available in the next issue of *The Bee Line*. The Willamette Valley Association will look for help hosting the State Fair booth, and it is hoped other Associations will get involved and have their area featured before thousands of Fair-goers.

The Oregon Dept. of Agriculture received a \$3.2 million grant to promote specialty agricultural

products (like pollination and honey). By the end of November they should have some guidelines for applying, and we will get those to the volunteer committee. I attended the initial meeting and am hopeful that the OSBA can get some funding.

I received several calls from Dept. of Agriculture folks in the last few months who are concerned about reports of coumaphos misuse in other states (see related article on page 5). PLEASE use this product carefully and follow label directions closely. We cannot afford to lose this tool.

The 2002 Conference will be a state conference rather than a regional one, so we will be looking at a different location and perhaps a smaller agenda. The Conference Committee will tackle these details and others, such as speaker transportation. If we go to a coastal location we may have to limit out-of-state speakers to avoid shuttling back and forth to the airport. If you have any input or want to help, contact Dave Graber soon.

I want to publicly thank the National Honey Board for putting on such a wonderful buffet at the Conference and for providing so many helpful handouts. I encourage all of you to use the NHB web sites (www.nhb.org and www.honey.com). They offer lots of ideas and marketing tools.

All of our speakers were fantastic. I think we listened to Dr. Loper with our mouths open to hear about the research he and Dr. Bromenshank are doing. Hearing how Richard Adey and George Hansen run their commercial operations was fascinating for those of us who are hobbyists or sideliners. Cappy Tosetti gave some great marketing tips (and handouts) – once the bees make the honey you have to sell it! Mr. Reuter's information on bee breeding was enlightening, and Dr. Currie's talks on winter feeding and on the economic effects of Varroa were useful to all beekeepers. I didn't know much about the ARS Labs until Dr. Wilson spoke, or the extent of foulbrood resistance to Terramycin. Our own Dr. Burgett and Dr. Sheppard were outstanding, as usual. We are fortunate to have bee programs at OSU and WSU and are determined to keep the OSU position funded when Dr. Burgett retires.

Happy holidays! See you in 2002!

(cont. from page 1)

Interest in mating bees in confinement goes back over 230 years and continues here in Oregon (Dr. Lynn Royce) and in Missoula and Tucson.

When we learned that a Defence agency was building a large “tent” in San Antonio, we just had to see if queens and drones could successfully mate in it. This tent covers one square acre (110’ on a side), is 30’ tall on the sides and 40’ tall down the center. However, the top netting sags to something less than 30’ in places. It encompasses several trees, shrubs, grass and some unwanted birds and rattlesnakes!

So far we have conducted three mating trials: November 6-16, 2000, March 21-April 10, 2001 and September 26-October 10, 2001. We obtained a few matings (3 out of 8), in November, none (0 out of 12) in March and 1 or 2 (out of 9) last time. So we have been encouraged and discouraged. Newly mated queens should have 5-7 million sperm. In November we had one queen with 1.5 million, but the others had less (1.3 and .7 million. We don’t yet have sperm counts from the last trial. In each trial drone numbers were less than desired, for various reasons, and I think this was part of our problem. Matings outside of the tent were poor in November 2000 but were better than 80% in the other two trials.

One other “electronic” area of bee research I want to mention is also high on Dr. Bromenshank’s goals – that of being able to track bees in flight, especially queens on their mating flights. In the late 1980s I was able to show that a modified x-band radar was very good at documenting drone flight. But we could not distinguish one bee from another, nor could we follow a single bee for more than a few seconds of flight. We did document patterns of flight behavior. Dr. Bromenshank has been miniaturizing devices that, glued to the back of a bee, will send – or return – signals, allowing the bees to be tracked in flight. We have still not reached our goal of tracking queens on their mating flight, but Dr. Bromenshank is getting tantalizingly close.

Feral Bees in Arizona

Dr. Gerald Loper

(a summary of Dr. Loper’s presentation at the Northwest Corner Fall Conference)

Before the tracheal and Varroa mites arrived, the California and Arizona feral colonies survived, on average, 3 ½ years. I began sampling in 1991, not only for genetic studies but also for tracheal mites. I found that some colonies already had serious infestations in 1991 and in two years they had spread throughout the study area. In fact, but 1993, about 30% of these European colonies seemed to be resistant to the tracheal mites, but then the Varroa mites showed up, about the same time as the Africanized Honey Bees (AHB) started invading. The last genetic data I have on this population is from December 1998 when about 85% of the surviving colonies (47) were AHB. It appears that the surviving population in southern Arizona has genetically stabilized, is AHB, and has adapted to the presence of mites. They have repopulated these nest sites to about 35% of the European Honey Bee (EHB) level. At the worst of the Varroa mite invasion, swarms were only living six months, instead of 3 ½ years, but length of survival has been gradually increasing, to at least 1 ½ years on average.

Web Sites

Reprinted courtesy our friends from the Southern Oregon Beekeepers Association

The first of the sites is from the University of California at Davis, the second is a good site for general information, the third is for information and some construction information, and the fourth is a huge site for all around the world with some not in English. These can keep you busy for hours.

<http://entomology.ucdavis.edu/faculty/mussen/news.html>

<http://www.internode.net/HoneyBee/>

<http://beesource.com>

<http://www.tnbeekeepers.org/learning.htm>

Northwest Beekeeping

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- Order supplies for next year, verifying prices by phone before ordering.
- Disturb the bees as little as possible. Don't break the cluster.
- Check apiary occasionally for blowovers or vandalism.
- Continue the repair and/or assembly of next year's equipment.
- Tally costs for the past year: pounds of sugar used, equipment costs, medication, supplies, etc. Update information on syrup mix recipes and pollen supplement recipes.
- Record yields. Do book research on weak areas. Investigate areas of marketing interest: honey, pollen, propolis, venom, wax, royal jelly.
- Design and build better beekeeping equipment: pollen traps, hive tools, hive boxes, smokers, equipment caddies, etc.
- Mentor a young or inexperienced beekeeper.
- Donate equipment, scholarship money or expertise to the 4-H Beekeepers Club.

Coumaphos Use

(reprinted with permission from UC Apiaries Cooperative Extension newsletter, by Dr. Eric Mussen)

Michigan State Apiarist Michael Hansen wrote the following letter for publication in the Michigan State Beekeepers Association newsletter. I suggest you "read and heed!"

"It hasn't taken long and already the regulatory world is looking down with consternation as beekeepers that are misusing Checkmite+ (coumaphos). In several states beekeepers are facing fines for abusing this product by ignoring label requirements. Reports of misuse include beekeepers leaving strips in colonies during honey production, leaving them in all winter long, cutting the strips in

half and even reusing the strips. What do we accomplish by misusing pesticide products?

First, there's the issue of human health. Checkmite+ strips are to be removed during honey production to prevent residues from accumulating in honey at levels that may be harmful to human health. Why would someone want to take the chance of impacting human health? We'll create work for laboratories that will check honey for traces of coumaphos. Honey buyers will have to make sure the products they buy are pesticide free by submitting samples to laboratories. If you get caught, expect to lose your crop, your good name and a lot of money.

Second, we'll increase the rate of resistance tremendously. Nothing gives mites a fighting chance like long-term exposure to sublethal doses of pesticides. Mites are among the most adaptive animals known. Why would we want to help them develop resistance?

And third, we'll jeopardize legal use of this product. After all, why would EPA authorize emergency use of a pesticide that is being blatantly misused, especially if there is a potential for an adverse health effect.

EPA wants to make sure that the beekeeping industry realizes that no one is standing in the doorway with a new miticide at this time. When the mites are resistant to coumaphos, there is no replacement. So, why does a small percentage of the industry insist on gambling away our ability to control our most crippling pests?

Conference Auction Items a Big Success

Thanks to those of you who brought items to the silent and the oral auctions at the Conference. Everything sold out and folks had a good time bidding on all the goodies.

Thanks to the following folks who brought items for the silent auction: Lane County Beekeepers, Mann Lake, Vince Vazza Farms, Joann's Honey, Bee Culture, George Hansen, National Honey Board, Glory Bee, Fines Skeers and RayBee's Honey. The silent auction raised almost \$300.

No list was kept of contributors to the oral auction (we need help here!), but special thanks to all those who brought goodies. Dr. Mike and Dr. Steve were busy for two hours (!!) keeping the bidding lively, and their "minions" (OSU and WSU grad students) were kept hopping between showing items and delivering them to successful bidders. A final report on oral auction income should be available next month.

Thank you!

VP Dave Graber Shares Sweet & Spicy Honey BBQ Sauce Recipe

If you had the chicken or pork for dinner at the Northwest Corner Fall Conference, you had this sauce. OSBA Super VP Dave Graber not only put the Conference together and made it work so well, he also rolled up his sleeves, went into the kitchen and whipped up a batch of his own Sweet & Spicy Honey BBQ sauce. Can mild-mannered Dave also leap tall buildings in a single bound? Stay tuned! Dave shares his Super Secret recipe here.

Sweet & Spicy Honey BBQ Sauce

1 quart honey
1 T. minced fresh elephant garlic (can use regular garlic)

1 – 2 T. grated fresh ginger root
1 6 oz can tomato paste
½ t. chili powder (or to taste)
1/3 c. soy sauce

Gently warm the honey. Add remaining ingredients and stir over low heat until smoothly blended. Use to glaze turkey, chicken or pork.

Note: This recipe makes quite a bit. After the mixture has cooled, the sauce that won't be used soon can be poured into freezer containers and stored in the freezer. Also, if you don't like the bits of garlic and ginger in the finished sauce, strain it while warm. However, let the seasonings "steep" for at least 30 minutes before straining to let the flavors infuse the honey. Enjoy! Thank you, Dave!

Why Beekeepers Trucks Are Never Stolen

Reprinted courtesy our friends from the Southern Oregon Beekeepers Association

They have a range of about 20 miles before they overheat, break down or run out of gas.

Only the owner knows how to start them. The automatic choke was long ago replaced by a hand choke that's hard to find.

The air conditioner hasn't worked in 12 years. The epi-pens in the glove box are almost that old.

The steering wheel hangs onto YOU, as it's covered with propolis. Door handles and gear shift knob, too.

You can double its value by filling the gas tank. The last time you changed the fuel filter you found dead bees in it.

The passenger door is held shut with bungee straps.

The tailgate is scorched from when the smoker set fire to the supers.

There's a quarter inch of dust on the dashboard.

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It is difficult to drive fast with all the hive tools, baling twine, rags, ropes, chains, buckets of terra mix, veils, bungie straps, boots and loose paper in the cab.

Bear-Proof Beekeeping?

By Diane Varner

Honey customers asking for fireweed honey smile when we tell them we have to wrestle the bears to get it, but in fact that's fairly close to what beekeepers have to do in order to harvest this high-demand honey. I've heard a lot of stories from beekeepers who lost hives and honey to bears. How about those of you who are successful? Care to share your secrets?

Terry Parker from the Tualatin Valley Beekeepers shared this photograph of his bee trailer on site for fireweed. The hives are enclosed in a "cage" of chain link fence, but the secret to Terry's success is in the metal fencing laying on the ground all around the trailer. It's electrified, so any bear or other varmint that stands on it gets a good jolt, enough to make them think twice about getting close. Terry harvested a nice crop this year and says that in spite of bear signs in the area, his hives were not bothered.

Foaming Vanilla Honey Bath Oil

Measure 1 c. sweet almond oil into a medium bowl (light olive oil or sesame oil may be substituted). Carefully stir in ½ c. honey, ½ liquid soap (plain or flower-scented) and 1 T. vanilla extract until well blended. Pour into a clean plastic bottle with a tight-fitting stopper or lid. Shake gently before use. Makes enough for four large luxurious baths.

Holiday Punch Recipes

Hot Spiced Cranberry Punch

2 lemons, thickly sliced
 24 whole cloves
 6 c. cranberry juice cocktail
 2 c. lemonade
 ½ t. ground cloves
 ½ t. ground cinnamon
 ½ t. ground allspice
 1 c. sugar or honey
 12 cinnamon sticks

Stud the lemon slices with the whole cloves. Combine the other ingredients in a nonreactive pot, add the lemon slices and simmer for 15 minutes. Serve in a 2 quart punchbowl. Garnish individual servings with cinnamon sticks.

Warm Tea Punch

3 c. water
 10 orange herbal teabags
 15 whole cloves
 4 cinnamon sticks
 4 c. cranberry juice
 3 c. white grape juice
 1 c. brown sugar

Heat water to boil. Turn off heat; add tea bags, cloves and cinnamon sticks. Cover and steep for 5 minutes. Remove tea bags. Stir in juices and brown sugar. Heat through. Remove spices before serving.

