

# MISSOURI STATE BEEKEEPERS ASSOCIATION

1407 Sneak Road  
Foristell, MO 63348

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Ronald B Vivian  
Rt 1 Box 95-A  
Bates City, MO 64001

## OFFICERS

<u>President</u>	Neal Bergman	P.O. Box 591	Kennett, MO 63857	573-888-2465	
<u>Vice President</u>	Ian Brown	1407 Sneak Rd.	Foristell, MO 63348	314-398-5014	<a href="mailto:ibrown@mail.win.org">ibrown@mail.win.org</a>
<u>Treasurer</u>	Ron Vivian	Rt. 1 Box 35-A	Bates City, MO 64001	816-690-7516	<a href="mailto:H1vbrook@aol.com">H1vbrook@aol.com</a>
<u>Secretary</u>	Don Moore	15 Kathryn Dr.	St. James, MO 65559	573-265-8706	<a href="mailto:dmoore@stjames.k12.mo.us">dmoore@stjames.k12.mo.us</a>
<u>Program Chair</u>	Larry Hensley	13520 Old Jamestown	Florissant, MO 63033	314-355-6935	
<u>Editor</u>	Pam Brown	1407 Sneak Rd.	Foristell, MO 63348	314-398-5014	<a href="mailto:ibrown@mail.win.org">ibrown@mail.win.org</a>
<u>Auxiliary Pres.</u>	Vera Gelder	6800 N. Kircher Rd.	Columbia, MO 65201	573-474-8837	

## UPCOMING MEETINGS OF INTEREST

September	National Honey Month	NHB	800-553-7162
Sept. 19	Board Meeting	Jefferson City	Ian Brown
Oct. 9	Beekeeping Class	Lake of the Ozarks	Ray Nabors
Oct. 9	Board Meeting	Lake of the Ozarks	Ian Brown
Oct. 9/10	Banquet/State Meeting	Lake of the Ozarks	Larry Hensley
Oct. 10	Auxiliary Meeting	Lake of the Ozarks	Vera Gelder
Nov. 11-12	Commercial Ag. Institute	Columbia, MO	573-474-8837
Nov. 30	Last day to submit articles for next newsletter		Bob Harrison
Dec. 13	Governor's Conference	Tan-Tar-A	816-230-5424
Jan 4-9	Honey Producers Meeting	Baton Rouge, LA	
Jan. 7-12	ABF Convention	Nashville, TN	504-924-5000
Sept. 12-18, '99	Apimondia	Vancouver, BC	912-427-4223
			604-681-2503



In 1987, beekeepers in Europe and the Middle East took a chance by using fluvalinate in an unauthorized manner to control varroa mites.

Their hives and pollination capabilities are now in rapid decline since misuse has led to varroa tolerance and the decimation of their bees.



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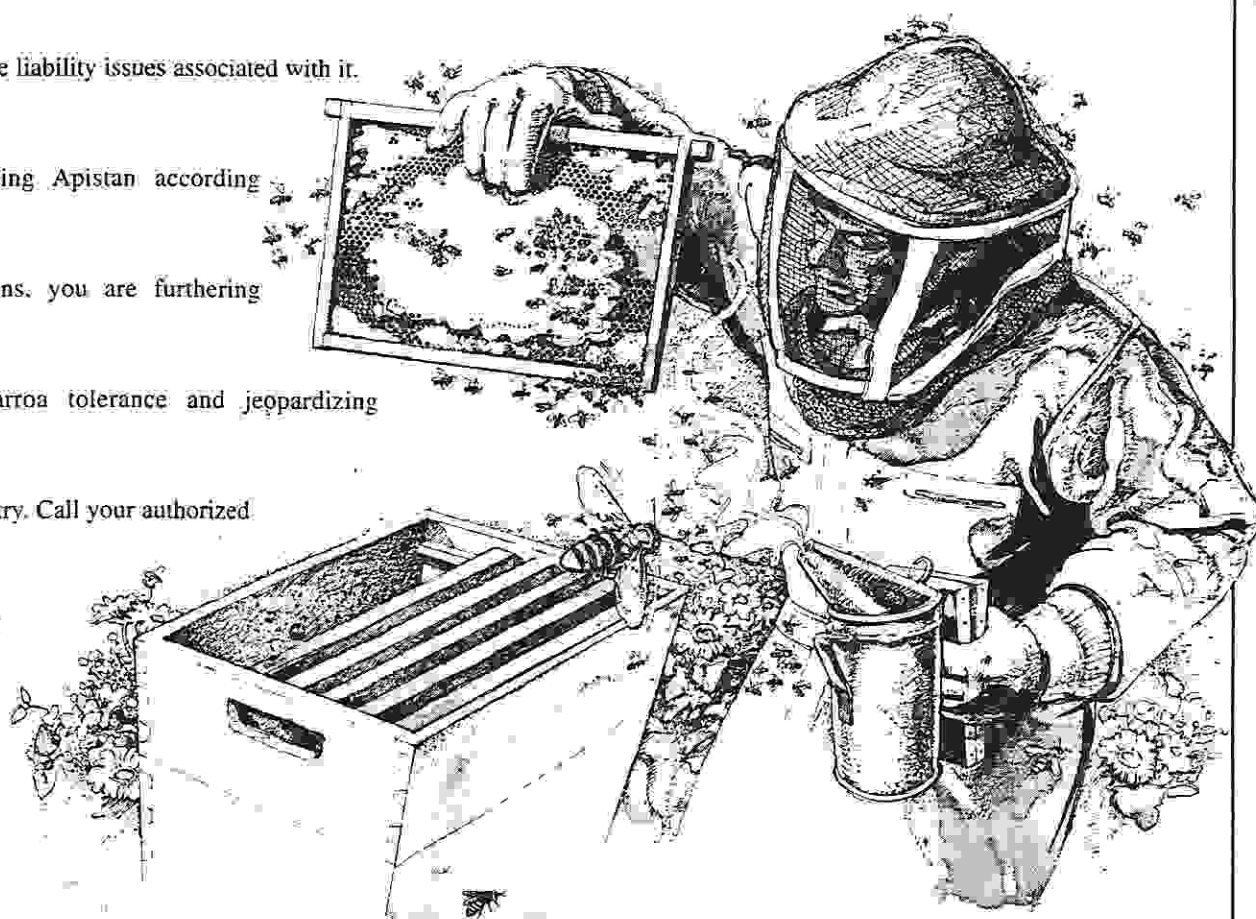
If you are not using Apistan according to package directions, you are furthering the problem of varroa tolerance and jeopardizing

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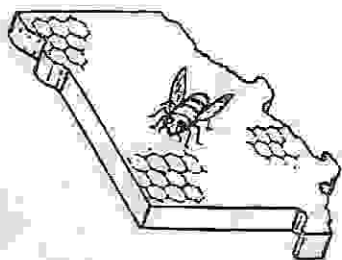
with questions.



ABUSE IT.

**APISTAN**

LOSE IT.




# Missouri State Beekeepers Association September 1999

## President's Column

Well, most of us have our honey removed, the State Fair is over and we are looking forward to good sales and a great Fall Meeting.

I want to congratulate Rose Terrell for winning the Individual Grand Championship and to Mid Western Beekeepers for winning the Group Grand Championship. We all recognize your hard work in achieving this honor. We were disappointed in the number of entries, and the fact that only three locals were represented. This reflects badly, are only three locals interested in the fair? We are working to improve participation and anticipate a large showing next year.



 I wish to thank Ed Leviskas, Over-All-Coordinator and Art Gelder, On-Site-Manager. Both men gave much of themselves and their time, both did a great job. They had to step in at the last minute to cover jobs, that other individuals had consented to do, but did not. We should be faithful to our commitments, this causes unnecessary strain/work on our fellow members.

I am excited about the two day Fall Meeting, October 8 & 9, I am looking for a record turnout. I am asking that the officers of each local association contact their local newspapers and radio stations, asking them to announce the meeting. This is a great tie-in with September being National Honey Month. Maybe, you can "kill two birds with one stone". Please, remember that this is a volunteer organization and your officers, cannot handle all of these responsibilities, but with each local doing their part, we can inform all areas of the state about National Honey Month and the Fall Meeting. If you have not already done so, you can order a special packet from the NHB, about how to advertise honey month.

Mr. Robert Sears has agreed to be our legal advisor and Mr. Mickey Lee will serve as our parliamentarian until the end of the year. Both men are members of Eastern Missouri Beekeepers. Thank you, both.

August 30<sup>th</sup>, Art & Vera Gelder, Don Moore, Pam and I traveled to Jefferson City to witness and receive the proclamation from Governor Carnahan, declaring September as State Honey Month. We presented the Governor and his staff a basket of Missouri honey products. We share September with the soybean, walnut, apple growers and chicken producers. We followed the soybean growers, so I made mention of how important honey bees are to the production of soybeans (and that there might even be some soybean honey in our gift basket)! Then when the chicken producers received their proclamation they thanked the beekeepers for helping pollinate the soybeans, which feed their chickens. The walnut representatives presented the Governor a tin of cookies made from walnuts and soybean flour, the representative stated that next year, he would make sure that the cookies contained honey. It was also apple month, but their horticulturist didn't make mention of the importance of honey bees to their crop. If I had known that the apple group was there, I would have made mention of it. It was good to see how the different commodity groups are working together and recognizing our dependence on one another. It was enjoyable. Besides the four commodity groups, we share September with Sickle Cell Anemia Awareness. We need to realize this is indeed a problem in our state. Watch your newspapers, a picture and article should appear in the St. James and Columbia newspapers along with the St., Charles edition of the St. Louis Post-Dispatch, Wentzville Journal and the New Melle Explorer.



Later in the newsletter, you will find two forms to complete and return. Please volunteer your services and nominate individuals that you think will make good officers.

Again, thanks to each and everyone one doing their

part in the State Association and hope each one of you "make a lot of money with your honey"!!

*Ian*

## Honey of a Verse

There was a man who loved bees.

He always was their friend.

He used to sit upon their hive

But they stung him, in the end.

*Bee Alert, University of Montana*

## For Your Funny Bone

"How are things going?" one bee asked another.

"Terrible," the second bee replied. "I can't find any flowers or pollen anywhere."

"No problem," said the first bee. "Just fly down this street until you see all the cars. There's an outdoor bar mitzvah going on with lots of flower arrangements and fresh fruit."

Thanks!" said the second bee, buzzing off.

Later the two bees ran into one another, and the second bee thanked the first bee for the tip. Then the first bee asked, "But what's that thing on your head?"

"My yarmulke," the second bee replied. "I didn't want them to think I was a wasp."

*Readers Digest,  
July 1999*

## COME ONE - COME ALL

Our Annual Fall Meeting will be held on October 8 & 9, Holiday Inn, Lake Ozark. There will be something for everyone, beekeeping classes, organized shopping, cooking contest, queen rearing, how to market your honey, lots of exciting events. Our special speakers will be Kim Flottum, editor of *Bee Culture* and Dr. Ray Nabors. We hope to have a record turn out. If you have not already received your registration forms, contact Larry Hensley, our Program Chairman.

## Cost Concerns

There has been some recent discussion regarding the \$10 registration fees for each of the two state meetings. At the meeting in 1997, the matter was brought to the attention of the entire membership that to have a first class meeting with renowned speakers, it would be necessary to increase the charge. It was decided at that time, that each attendee pay \$10, this would provide a pool of money to secure expert speakers. The association is not making any money from the cost of the meals.



## Some of the Business Items to be Discussed at the Fall Meeting

1. We will be voting on a proposed change in Article 4, Section 1 of the Missouri State Beekeepers Association by-laws. "The dues shall be ten dollars (\$10.00) per individual or fifteen dollars (\$15.00) per family, each with voting rights."
2. Election of officers.
3. Election of NHB representative.
4. Continuation of the Queen Program
5. An official secretary report and treasurer report will only be given at the Friday night meeting, for those wanting to see the reports, there will be printed copies available at the Saturday meeting for you to view, then only questions or remarks will be taken at the Saturday meeting.

Any items to be brought up at the meeting need to be presented to the President, Ian Brown, prior to October 1 so that an agenda can be prepared, so that time will not be wasted at the two business meetings. We appreciate your cooperation in this matter.

## Needed for the Fall Meeting

☛ Entertainment for the banquet, please don't say that no one in our organization doesn't have any entertainment abilities! We are seeking, magicians, musicians, comedians, jugglers, etc. anyone that can give a



few minutes of entertainment. Contact Pam Brown.

- ✿ An auctioneer for Friday evening. Contact Pam Brown.
- ✿ Help at the registration table, we will be conducting more business at the registration tables and need additional help. If you will volunteer please contact Larry Hensley/Ian Brown. We will need four people on Friday and six or seven on Saturday.
- ✿ Two volunteers each day to sell raffle tickets. Contact Larry Hensley.
- ✿ One Sergeant-at-Arms each day, to enforce keeping noise down in the meeting room. Contact Larry Hensley.
- ✿ Volunteer to make and place banquet place cards. Contact Pam Brown.



## A Bit of History

Traditional beekeeping meant that the whole comb was removed, pressed, heated and used up – and the bees, left without food supplies, starved or were killed, in 1852 an American vicar, the Rev. L.L. Langstroth, perfected a wooden hive based on the simple principle of surrounding movable frames with a “bee space” – an area just large enough to discourage the bees from gluing their comb solidly to the wall of the hive.

An officer in the Italian army, Major Hruschka, then devised a way of extracting honey from the framed comb by centrifugal force – quick, clean, without heat (which can alter the color and flavor of honey), and leaving the comb intact for the bees to use again.. Present-day small honey extractors hold nine frames at a time and rotate them mechanically.

The next step was to present the bees with an artificial foundation for the comb, thus reducing their labor and improving the reliability of the comb's shape. In the 1800's the A.I. Root Company of Medina, Ohio, developed a roller-press for making foundation plated of wax, almost as thin as the natural ones. This invention overcame the final obstacle on the way to large-scale honey production.

Pages 12, *HONEY*, 1990 Bantam Books

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## Queen's Piping



Crystal had her recipe brochures at the fair, be certain to pick one up at the Fall Meeting.

Please remember that the Honey Queen is available to help you promote your honey products. Farmers' markets, local festivals and fairs, and store promotions are excellent places for the queen to help put the spotlight on your business.

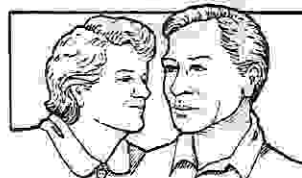
If you would like the queen to appear at your event, call Vera Gelder.

## Ray's Remarks

Dr. Raymond Nabors, Missouri Extension Entomologist

I plan on seeing each of you at the fall meeting, where Kim Flottum and I will be teaching the beekeeping class on Friday, then on Saturday, I will be speaking on controlling arthropod pests of honey bees.

This past year I have been the resource person for Apitherapy for the MSBA. I will be glad to speak to anyone regarding this topic, during the meeting. We will not have a designated session on the agenda, but I am sure we can find time one-on-one to talk.





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We offer fast and courteous service to all beekeepers.

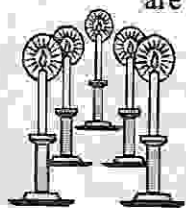
We sell all the supplies for beekeeping, plus bees, queens and honey for those who run short. Order is shipped the same day as received in most cases. Free catalog on request. Business hours: M-F 8-5; Sat. & evenings by appointment. Phone 402-274-3725.

Address: DRAPERS SUPER BEE, 914 S Street, Auburn, NE 68305.

## News From the Auxiliary

Vera Gelder, President

Wow, the fall meeting is almost here! Hope everyone has been trying out new recipes for the contest. (Ray, are you ready for the judging?) In case, you



don't re-member or haven't heard, we will be having a honey and beeswax contest this October. The items can be food, cosmetics, soaps, candles, crafts, household items, etc. and should include the recipes or instructions. We

want to produce a book with *different and new* uses of honey and beeswax. We have food recipe brochures, but what else can be done with honey and beeswax? Or do you have a food recipe that is your favorite? (Food always works.)



Ray Nabors volunteered at the spring meeting, and I am still looking for a couple of other people to be judges. If you have any questions or would like to volunteer as a judge, give me a call at 573-474-8837 or e-mail [walkabot@computerland.net](mailto:walkabot@computerland.net).

I want to thank these people who contributed items for the silent auction held last March: Dolores Vivian, Larry Hensley, Rose Terrill, Sharon Waddell, Pam & Milt Wright, Buxton Honey, Jansen Apiaries, Joli Winer, Carol Kjelshus, Gibbons Bee Farm, Joanne Davis, Femme Osage Apairy, Adam Levinskas, the unknown beekeeper and the hungrier beekeeper (and anyone I missed). We raised over \$325 for the Queen program. The silent auction is always a lot of fun, and hopefully turns your "trash" into someone else's treasure. It's amazing how much a half-eaten stale donut can be treasured by others. We will have the silent auction again at the Fall Meeting in October, bring your "stuff"!

We will again, be having our Queen Auction and the Friday night banquet. We will do it a little different this year, you are to bring your item wrapped, with a "clue" attached to the package, i.e.: for a jar of honey, you might have "it's so sweet"; for comb honey, the clue might be "I have no open cells"; for candles, "I bring light to darkness" or "place me around your bathtub for a relaxing experience"; for a tea or coffee pot, "tip me over, pour me out" or "I am short and stout", for a clock you might tease with, "hickory dickory dock", you get the idea!!

Do you have any suggestions for programs at our meetings? Are there things you would like to know about? Are there speakers you would like to hear? Let me know.

Looking forward to the fall meeting and seeing you there. Keep on "buzzing" and don't forget to bring something for the contest.

Vera

## Mike Brown's Comments

State Entomologist

To my knowledge Checkmite strips have not been given Section 18 approval for Missouri.



From the EPA, Office of Pesticide Programs - Methyl Parathion Risk Management Decision

EPA has accepted voluntary cancellation of many of the most significant food crop uses of methyl parathion, one of the most toxic and most widely used organophosphate pesticides. Methyl parathion has been found to pose unacceptable dietary risks to children. Removing these crop uses considerably reduces risks to children through food, as well as risks to workers and the environment (including honey bees).

### Rationale:

Methyl parathion is one of the most toxic organophosphate pesticides. The organophosphate can over stimulate the nervous system causing nausea, dizziness, confusion, and at high exposures, respiratory paralysis and death. EPA's risk assessment showed that methyl parathion could not meet the FQPA safety standard as the pesticide is currently registered. The acute dietary risk

to children age one to six exceeded the reference dose (or amount that can be consumed safely over a 70-year lifetime) by 880%. To mitigate the high dietary risk to children, EPA accepted voluntary cancellation of those crops that contribute most to the children's diet. These canceled uses represent 90% of the dietary risk to children. Removing these crop uses brings the estimated dietary risk down to 78% of the reference dose, making the risk from food acceptable for children and all others in the U.S. population.

#### Uses Canceled and Maintained:

**Canceled Children's Food Uses:** All fruit (apples, peaches, pears, grapes, nectarines, cherries, and plums), carrots, succulent peas, succulent beans, and tomatoes.

**Other Canceled Food Uses:** Artichokes, broccoli, Brussel sprouts, cauliflower, celery, collards, kale, kohlrabi, lettuce, mustard greens, rutabagas, spinach, and turnips.

**Canceled Non-Food Uses:** Ornamentals, grasses grown for seed, mosquito use, and nursery stock.

**Uses Remaining:** Alfalfa, almonds, barley, cabbage, corn, cotton, dried beans, dried peas, grass, hops, lentils, oats, onions, pecans, rape seed (canola), rice, rye, soybeans, sugar beets, sunflower, sweet potato, walnuts, wheat, and white potatoes.

#### Timing for Canceled Uses:

Existing stocks of methyl parathion products with canceled crop uses may be applied until December 31, 1999. The use cancellations will become effective early next year. Technical registrants of methyl parathion will amend their labels to allow reformulation only to those uses being maintained. Registrants may repackage or relabel their products to reflect only the maintained uses. Application of methyl parathion for the canceled uses will be prohibited for the 2000 growing season.

#### For Additional Information

Contact EPA's Office of Pesticide Programs at (703) 305-5017, or see their web site, [www.epa.gov/pesticides/](http://www.epa.gov/pesticides/).



*Mike*

## **State Fair Reports**

The fair is over for another year. Hope everyone who worked and visited the fair had a good time. According to Mike Brown, there were 10 more entries over last year. Most of the entries were new beekeepers entering for the first time, and from what I have heard, some of them received ribbons. What a great way to start beekeeping.

I don't have all the totals of receipts but sales were good and receipts were up.

If you didn't make it to the fair, we had several new items for sale such as: T-shirts, stationary, mini 2" candles, 1/2 gallons of honey, 24 oz. honey bears, empty 12 oz. bears for the table, and many more items. We changed the look of the booth so people could come back and look at items for sale. This worked but needs some refining. We had some honeybee flags hanging from above. The bee trivia signs around the booth and display area attracted attention and questions about bees. Ideas are already coming in for the booth next year. If you have any ideas or have seen something at another fair that was interesting please let us know, so we can keep trying to make our booth the best at the fair.

I would like to thank everyone who worked at the fair this year. If not for them we wouldn't have had as good a year.

Ted & Marlene Jansen  
Ian & Pam Brown  
Ervell & Ruth Hoover  
Joe & Rosaline Baumann  
Red & Cynthia Woodman  
Jerry & Donna Dowell  
Ed & Judy Levinskas  
Ruben Carter  
Frank Parish  
Barbara Brazos  
Barbara Fetchenhier  
Dan Ravenelle  
Jessica Levinskas  
Pam Wright  
Luanne Duckworth  
Lee Cavender  
Don Reinkemeyer

Ed & Jean Fisher  
Glen & Joanne Davis  
Bill & Rose Terrill  
Don Dick  
Joyce Wiley  
Andy Dowell  
Ron Vivian  
Bob McCarty  
Blane Wilson  
Sharon Gibbons  
Michelle Martin  
Charles Schwartz  
Sharon Waddell  
Neal Bergman  
Jesse Lyons  
Margie Furlong

Thank you all for helping, and I hope I didn't leave anyone out. My apologies if I did and thank you very much. Special thanks to my wife Vera who had to do

all the work at home while I was gone. Thank you again to all.

## Art

The first thing that needs to be said is THANKS to all who participated in staffing the booth at this year's Fair. The MSBA participation in the Fair was successful. There were times when Art and I nervously looked at the sign-up list to work the booth and wondered what we were going to do if we were short of help. However, the story had a happy ending in that when all was said and done there were plenty of volunteers. All of the participants were volunteers, and again, a hearty thanks to all. A special thanks to Art Gelder, who pretty much camped out at the booth as this year's On-Site Manager.

Also, THANKS and congratulations for all who entered honey or beeswax items in the Fair. Although this is a competitive judging event I think that all who entered were real first-place winners. If you got a ribbon, congratulations. If not, keep trying. There was no Sales Committee this year. Unfortunately we could not find a volunteer to chair this committee. The Sales Committee is supposed to decide what items other than honey and beeswax items will be sold at the booth. Fortunately Art & Vera Gelder and Pam & Ian Brown were able to arrange some other bee and honey related items for sale at the last minute. THANKS to all of them.

Rose Terrill did a lot of work setting up accommodations for the Fair workers that needed a place to stay overnight. THANKS, Rose.

My personal observations were that the honey ice cream was a big hit again this year and the regular honey seemed to moving quite well. Reporting on the volume of sales and money taken in will be provided by the Treasurer. The AgriMissouri booth cooperated with us quite well by agreeing not to sell competitive honey products at their booth (which was just across from us). A special THANKS to them for working with us on this.

The candle-making, where Fairgoers would make their own rolled beeswax candles, was dropped from the planning because we didn't think that we would have enough volunteers to staff it adequately. As it turned out we probably could have handled it. Maybe next year.

Judy and I personally worked at the Fair on the opening Thursday, and my daughter Jessica worked two days of the second week. That is all the time at the Fair that I really have any detailed knowledge of. I know the booth was a big hit with a lot of folks, and seemed to be drawing a lot of interest. The observation hive and the videos were always surrounded with onlookers. And then so was the honey. I'm sure I have overlooked many extra efforts by other individuals, and I am sorry about this but I do express our THANKS to all.

We are planning to have a post-event meeting to analyze this year's Fair - what went right and what could be improved. No date or location has been set, yet. If interested in attending, please contact me. We did a lot of the Fair planning by e-mail this year. If I do not have you on my e-mail distribution list, then send me a message and you will be added.

Ed



MSBA State Fair Point-of-Contact  
[elevinkas@compaq.net](mailto:elevinkas@compaq.net)  
(636) 946 6445

## Fair Winners

**Group Grand Champion**  
Midwestern Beekeepers Association

### Store Display

1st - Bill Terrill - Midwestern

### 25/50 lb Class

1st - Bill Terrill - Midwestern  
2nd - Richard Scott - Midwestern

### Cut Comb

1st - Bill Terrill - Midwestern  
2nd - Glenn Davis - Midwestern

### Bulk Comb Honey

1st - Glenn Davis - Midwestern  
2nd - Bill Terrill - Midwestern  
3rd - Donna Dowell - Midwestern

### 1lb Light Extracted

1st - Ted Jansen - Eastern  
2nd - Richard Scott - Midwestern  
3rd - Norm Grosche - Eastern  
4th - Michelle Martin - Midwestern  
5th - Robert McCarty - Midwestern  
6th - Rick Sauter - Midwestern



7th - Jason Behm - Midwestern  
8th - Donna Dowell - Midwestern

1lb Dark Extracted

1st - Robert Sears - Eastern  
2nd - Ken Corbin - Eastern  
3rd - Ted Jensen - Eastern

Ross Rounds

1st - Jason Behm - Midwestern  
2nd - Steve Harris - Mo Eastern  
3rd - Ted Jansen - Eastern

Beeswax

1st - Rick Sauter - Midwestern  
2nd - Sharon Gibbons - Eastern  
3rd - Bill Terrill - Midwestern

**Individual Grand Champion**

Rose Terrill



Observation Hive

1st - Robert McCarty - Sedelia, MO

Store Display

1st - Rose Terrill - Lone Jack, MO  
2nd - Art & Vera Gelder - Columbia, MO.

25/50 lb Class

1st - Rose Terrill - Lone Jack, MO  
2nd - Art & Vera Gelder - Columbia, MO

Cut Comb

1st - Ted Powell - Maryland Hts, MO  
2nd - Rose Terrill - Lone Jack, MO  
3rd - Robert McCarty - Sedelia, MO  
4th - Ted Jansen - Chesterfield, MO

Bulk Comb Honey

1st - Rose Terrill - Lone Jack, MO  
2nd - Robert McCarty - Sedelia, MO

Ross Rounds

1st - Jason Behm - Overland Park, KS  
2nd - Steve Harris - St Charles, MO  
3rd - Ted Jansen - Chesterfield, MO

1lb Light Extracted

1st - Ted Jansen - Chesterfield, MO  
2nd - Paul Binner - Kansas City, MO  
3rd - Sharon Gibbons - Ballwin, MO  
4th - Robert Sears - St Louis, MO

5th Norm Grosche - Green Park, MO  
6th - Rose Terrill - Lone Jack, MO  
7th - Lowell Hutchison - St Joseph, MO  
8th - Robert McCarty - Sedelia, MO

1lb Dark Extracted

1st - Robert Sears - St Louis, MO  
2nd - Ted Jensen - Chesterfield, MO  
3rd - Lowell Hutchison - St Joseph, MO  
4th - Kirby VonShouse - St Louis, MO  
5th - Ken Corbin - Chesterfield, MO  
6th - Dolores Vivian - Bates City, MO

Scaled Frame Honey

1st - Robert McCarty - Sedelia, MO  
2nd - Sharon Gibbons - Ballwin, MO  
3rd - Barbara Fetchenhier - Warrensburg, MO

Creamed Honey

1st - Robert McCarty - Sedelia, MO  
2nd - Rose Terrill - Lone Jack, MO

Art Design Wax

1st - Jean Blecha - St Louis, MO  
2nd - Rose Terrill - Lone Jack, MO  
3rd - Joy Stinger - St Louis, MO

Beeswax

1st - Rose Terrill - Lone Jack, MO  
2nd - Rose Lowell - Hutchison, MO

Beeswax Candles

1st - Joy Stinger - St Louis, MO  
2nd - Jean Blecha - St Louis, MO  
3rd - Rose Terrill - Lone Jack, MO

**Fair Freezer for Sale**

The association had to purchase a used deep freeze to use at the fair to store our ice cream. The freezer is for sale. We paid \$100 for the freezer then another \$40 to have it checked and serviced. It is in perfect working order, it is used, and therefore there are some outside blemishes. For size and other particulars contact Ron Vivian or Bob McCarty. The freezer is currently being stored at the home of Bob McCarty in Sedalia.

## Friend of Beekeepers Passes Away

For several years, Priscilla and Wray of Sedalia, opened their lovely home, giving beekeepers a place to spend the night. We send our condolences to Priscilla on the passing of Wray from cancer. He passed away, just as the fair ended.



Rt. 8, Box 8257  
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### BEE HIVE BOTANICALS

#### DID YOU KNOW?

Beehive Botanicals, Inc./Propolis U.S.S.+A> has been buying propolis and hive scrapings for over 20 years? Call 1-800-283-4274 for current prices, shipping and handling instructions.

We have a full line of Health & Beauty aids as well as food supplements made with propolis. Call for our wholesale order form.

## Honey Board Report

Representatives – Sharon Gibbons, Region 5 & Glenn Davis, Missouri

Many of you are already aware that there will be changes next year in the staffing of the NHB offices in Longmont, CO. The Board at their annual meeting in Orlando, accepted the resignation of Bob Smith, as

CEO of the NHB. We are presently working on selecting a management company to run our current programs and we are confident that you will not notice a change in the day to day contacts you presently have with the board.

Realizing the increasing costs associated with maintaining a dedicated staff, the concept of employing a management company was brought to the board. Since the NHB is committed to using industry dollars in the most prudent manner, the idea that we could put more dollars into programs is very attractive.

Change is always difficult and uncertain. The one certainty is the management of the NHB will be changing in the year 2000. What will not change is the mission, goals and high level of dedication from the board and those that manage the programs.

*Sharon*

### September is National Honey Month

September is National Honey Month — a time to honor honey bees and the delicious product they make. Honey Month has been celebrated every year since 1987 as a tribute to the hard-working bees and the beekeepers who provide us with naturally nutritious honey.

September was chosen because that is the time of the peak harvest of honey throughout the country. In addition, many of the country's agricultural crops, some of which are harvested in September, would not exist without the honey bee at bloom time.

As honey bees gather pollen and nectar necessary for their survival, they pollinate crops such as almonds, apples, blueberries, cherries, cucumbers, melons, pears and plums, to name just a few. Without the bees' pollination work, the fruits of the farmers' labor would be greatly reduced. In fact, a Cornell University study placed the dollar value of the work honey bees perform for U.S. agriculture at \$9.7 billion. A healthy beekeeping industry is important to a healthy agricultural economy. September is a time to enjoy the goodness of honey and to recognize the contributions of the honey bee and America's beekeepers.

Learn more about honey's natural advantage! If you would like to have a media kit mailed to you please call the National Honey Board at 303-776-2337.

## To Our Health

### Local Honey and Hay Fever

Some varied views from the Net on whether or not local honey helps reduce hay fever

I am a small commercial beekeeper in Western Australia, and today a client for whom I was removing some nuisance bees asked a question I couldn't answer... "Does eating locally-produced raw honey reduce ones reaction to airborne pollen i.e. hay fever?" —

He had heard claims made to this effect, and thought that, as a beekeeper, I should know the truth.

I thought it a very good question. I can see that it might be of help if ingesting and digesting samples of the local pollen produces any degree of tolerance. On the other hand, I don't know that breathing and eating the stuff are in any way equivalent vis-a-vis allergies.

Ken Morris, Western Australia  
Ken Morris [kenm@wn.com.au](mailto:kenm@wn.com.au)

My wife, who suffered from air-borne pollen allergies for years before we were married, claims she was "cured" by using our unfiltered honey.

Perhaps more important, we just met a new couple in town who are both doctors. One of the first things they did on visiting here to look for a home was find a local beekeeper (me) who did not extract his honey, but "drained honey from crushed comb" (the words in quotes were their requirements). One of this pair has terrible allergies. They explained they have moved several times and found that allergic symptoms can be prevented by eating "raw" honey from the new location for 6-8 weeks before moving. They attributed this build up of resistance to trace amounts of pollen in the honey.



For what it is worth, they claimed that any heating destroyed trace pollens, and the amount of trace pollens were increased by using honey from crushed comb that had been drained.

Lloyd Spear [LloydSpear@email.msn.com](mailto:LloydSpear@email.msn.com)

A couple of suggestions for you. Honey in the comb, i.e., as the bees have made it is the best for anything like this as it has nothing taken out, is not heat treated and contains all the honey, pollen and even small quantities of propolis which all help with allergies.

If you require further help on this I suggest that you contact the Apither List which is specifically for apitherapy interests the web site of that is <http://www.sci.fi/~apither> and the details of how to subscribe can be obtained from there otherwise contact me direct and I will give you the information.

Barbara Dalby [barbara.dalby@virgin.net](mailto:barbara.dalby@virgin.net)  
Barbara Dalby, England.

The truth is that the placebo effect is quite powerful. According to J. Schmidt and S. Buchmann in their article "Other Products of the Hive" in the 1992 edition of *The Hive and the Honey Bee*

*The consumption of pollen or unrefined honey containing traces of local pollen has been widely believed to help reduce the symptoms of hay fever. Although testimonial evidence abounds to support these beliefs, rigorous experimental investigations have revealed, at best, only marginal improvements in patients who consume pollen.*

*"Although some positive effects resulting from ingestion of pollen appeared in individuals with simple hay fever without asthma, the overall benefits were so marginal compared to the clear benefits of subcutaneous pollen injections (allergy shots) that oral treatments were not justified. These results indicate that if allergies are severe enough to merit medical attention, the best treatments are subcutaneous allergy shots; but if they are not that severe, there is no reason for an individual not to enjoy locally produced or raw honey and pollen products -- and if the hay fever is helped, that is an added benefit."*

Holly [hs1st7+@pitt.edu](mailto:hs1st7+@pitt.edu)

Does eating locally-produced raw honey reduce ones reaction to airborne pollen i.e. hay fever? Not for me, a beekeeper since 1971.

Tim Sterrett, Pennsylvania  
Tim Sterrett [sterrett@voicenet.com](mailto:sterrett@voicenet.com)

This is "common wisdom" that many people have through family tradition. On a good Saturday during peak allergy season, I have had as many as five people showing up at the Farmer's Market in San Francisco to get their allergy medicine refills. A blend from all hives in our local microclimates provide overall allergy

relief that is somewhat more enjoyable than a shot in the rump.

One woman said that she stopped taking the local blend honey and her allergies came back in about 3 weeks. We sell it suggesting a tablespoon a day. "They" say it works.

We have been unsuccessful with cat-hair and dust-bunny allergy relief honeys thus far.

Robert MacKimmie [rm@objectdata.com](mailto:rm@objectdata.com)

Here is an example of the classic difference between treatment based on the scientific method and anecdotal remedies. I, too, often get requests for honey to use in allaying symptoms of hay fever.

People want it "raw", "unfiltered", etc. But is there any logic behind these requests? What is the relation between inhaling an antigen (which is picked up directly in the lungs by immune cells) and ingesting a protein containing particle (pollen) which then immediately goes into the digestive tract and is broken down into its basic components before the body is ever exposed to it? I can't see the logic at all. And, even if it would work, why would one want to self-dose with an antigen that could possibly kill you with a general allergic reaction?

I always flatly refuse any such requests on the basis that I cannot practice medicine without a license. On the other hand, if one wants to buy honey for their own purposes, it is not my business to inquire what it is to be used for.

Ted Fischer, Michigan USA  
[Ted.Fischer.tyf@umich.edu](mailto:Ted.Fischer.tyf@umich.edu)

Antigens can affect the body through the digestive tract. After all, isn't that how food allergies work? However, in the case of hay fever, the antigen is picked up by the respiratory system, and the histamines produced affect the respiratory system. But your own post indicates that the digestive system is a much more resistant system and tends to break down the antigens. I always figured that was why eating the antigen was a slow way to acclimatize the body to the antigen and get it to stop producing so much histamine.

The fact that beekeepers get resistant to stings shows that the body can get used to antigens and reduce its production of histamines.



Anyway, that is just my layman's two cents worth. But I would not be quick to dismiss persistent folk remedies. They arose from experimentation and experience.

Stan Sandler [sandler@auracom.com](mailto:sandler@auracom.com)

Ken asked about the mechanism of how eating honey with a bit of pollen in it, from ones area may reduce hay fever symptoms.

Lloyd, Robert, Barbara, Tim, Ted, Stan, all mentioned a bit about this. I would like to add mine.

Pollen mainly causes allergies through it's accidental germination in the nasal cavities, as well as the lungs if things go wrong, where it, being a small specialized plant grows out a pollen tubule in search of a female egg to fertilize. This it does not find, but it does often find a blood vessel or some tissue into which it grows and is eventually popped by certain unspecified immune responses - releasing all sorts of foreign particles into the blood stream and tissue.

Your body becomes sensitive and develops a response to this. The response is due to a range of cells that produce the allergic response antibodies, *IgEs* - which are in much lower concentrations to others like the *IgGs* which usually get rid of most infections.

If one eats a lot of pollen - even a teaspoon full of honey will have million times more pollen than a room full of air - about what we filter a day - your body is posed with a huge exposure to pollen particles that do the hayfever thing all the way down your throat.

In some people this makes them throw up - my girlfriend cannot eat bluegum honey. I have to give her honey from the desert where no bluegums grow. I cannot use a super that has had eucalyptus honey in it otherwise she gets nauseas - a strong allergic response.

However, for most of us, the exposure to lots of pollen makes us develop a population of cells producing *IgG* to that stuff, as well as special cells which control the cells which release histamine - and the allergy goes away. Just like exposure to a cold for two weeks makes it go away, and so does flu and everything else.

Alternatively, one can go and have 'this or that pollen' desensitization shots - administered by doctors who are educated in institutions that would close down if it were not for the 'donations' they received from the pharmaceutical companies - i.e., doctors are told - if somebody has hayfever give them celestamine and



desensitizing shots at 1% of their annual income or whatever. The celestamine will cause possible permanent psychological problems if taken for too long, and the expense will as well. Honey on the other hand is cheap and nobody gets royalties for it except us beekeepers who are not important as a tax base at all - and we don't donate millions to universities that train doctors.

So my answer - yes sell people honey as an antidote to hay fever. If it does not work, at least it won't damage their brains like antihistamines do - even although these don't really work either!!

Garth Cambray, South Africa  
Garth g95c6713@warthog.ru.ac.za

I tell my customers that I can't prove that honey works for allergy relief. I also tell them that it tastes better than Benadryl or Sudafed and that the drug companies won't make anything from it because it is food.

Tom in CT  
Thomas Cornick BeeCrofter@aol.com



## What's The Risk?

*About the warnings on some honeys regarding young infants, honey and botulism. So why the warning and what are the risks?*

Margaret's article concentrates on good sound everyday hygiene, like cleaning work surfaces, the extracting room, stored comb, not putting supers straight on the ground and so on. All excellent advice, but unfortunately it partially misses the point in this case.

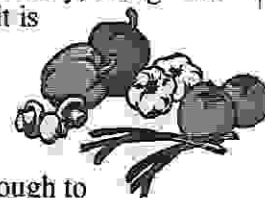
As Margaret points out, *Clostridium botulinum* comes from the soil and its spores are common on all raw agricultural products. This is a problem for infants under one year of age who have not obtained an adequate gut fauna to protect them from various bacteria. Once the fauna has been established, there is little problem from *Clostridium botulinum* in everyday concentrations.

All raw agricultural materials have the spores and it is essential to thoroughly wash all vegetables that come straight from the garden before feeding them to any child under one year old. Washing the vegetable removes most of the spores, but on items like carrots or radishes, the skin is porous or "wrinkled" enough that you need to peel the vegetable before feeding to children.

The spores get into honey when the bees collect water. The problem with honey is that you can't wash it and that's the only reason honey is singled out!

The majority of bacteria do not survive in honey due to its natural antiseptic properties and dehydrating effect. The risk from them therefore is minimal. It is the spore formers like *Clostridia* and *Bacillus* species that would give more cause for concern. AFB spores certainly remain viable in honey and this feature is used in some countries to monitor the disease.

The high concentration of sugar in honey, along with the production of peroxides when it is diluted, takes care of most infectious organisms. However a problem can come when diluted honey has been previously heated to over about 38C, which is hot enough to destroy the peroxide producing enzymes, but far from the temperature that destroys the harmful bacteria.



Basingstoke & District Beekeepers Assn.  
England

## Bee Pollen

**"Let your food be your medicine...let your medicine be your food."**

...Hippocrates

Bee pollen is probably one of the best kept secrets as a source of vitamins, minerals and amino acids. Bee Pollen contains protein - as much as is found in beans or lentils. Bee Pollen also contains lipids, free amino acids, carbohydrates, calcium, manganese, phosphorous, iron, sodium, potassium, aluminum, magnesium, copper, pantothenic acid, nicotine acid, thiamin, reboflavin, ascorbic acid (Vitamins C, D and E, enzymes and co-enzymes, pigments, xanthophyll, carotene and sterols

<http://www.Nanospace.com>

Some natural food enthusiasts do not advocate eating more than a teaspoon full of pollen a day, since it appears to act as a stimulant. Pollen that has begun to ferment should be avoided, because the yeast present may product in areas heavily devoted to agriculture may become contaminated with pesticides.

Pages 52-53 from  
*The Hive and the honey Bee.*  
Edited by Dadant & Sons, Hamilton, IL, 1982



**Honey Bee Pollen Milkshake** – Place 5 oz. raw milk in blender, add 4 oz. pollen and 2 oz. powdered carob. Turn on blender for 10 seconds. Powder 2 oz. shelled almonds and add to mixture. Turn on blender for 60 seconds. ENJOY THE PERFECT MILKSHAKE!

**Honey Bee Pollen Candy** - Put 4 oz. pollen in a mixing bowl, stir in 2 Tlbs. Powdered carob dissolved in 2 tbs. water. Mix in 3 Tlbs. raw honey and add 4 oz. crunch peanut butter and mix through by hand. ENJOY NATURE'S PERFECT CANDY!

**More Suggestions** – stir into; water sweetened with raw honey, protein shakes, juice, salad dressings. Sprinkle on: toast with honey, peanut butter, jelly, salads, deserts, cereals, mashed vegetables. Because heat destroys vital nutrients, we do not advise cooking with bee pollen. However, if this is the only way pollen will be ingested, you may add to: pancakes, all doughs, batters, cookies, cakes and so on.

**Remember, honey bee pollen is a food...not a drug.**

1984 C.C. Pollen Company  
Scottsdale, Arizona 85251

## **Bio-Engineered Honey Could Help Medicine Go Down**

**LONDON** — Dutch researchers are breeding genetically modified plants whose nectar could be used to produce honey containing drugs or vaccines, New Scientist magazine said Wednesday.

Scientists at the Center for Plant Breeding and Reproduction Research in Wageningen are adding genes for various drugs to the plants to produce a healing nectar.

They discovered a genetic switch, or promoter, that activates the genes in the nectary of the plant where the nectar is made. The switch is specific to the nectary so the drugs are produced only in the nectar.

"It's a production system that would require very little purification," Tineke Creemers told New Scientist magazine.

The genetically modified honey could either be fed to patients or the drugs could be taken from it.

Creemers and her colleagues are using a similar system to grow genetically modified petunias to produce a vaccine against a dog disease called parvovirus.

"Once the plants are fully grown and begin producing nectar, bees will be unleashed on them to produce honey that the researchers hope will contain the vaccine," the magazine added.

The study is restricted to greenhouses so the researchers can guarantee the bees are only feeding on the modified plants.

The scientists are also looking into whether the sugar in honey will act as a preservative which could be a big advantage for vaccination programs in tropical countries which lack large supplies of refrigeration equipment.

Fox News, June 24, 1999



## **News Releases**

**Missouri Department of Agriculture** – The Missouri Department of Agriculture is holding its 6<sup>th</sup> annual Fall Golf Classic on Saturday, October 2, 1999, at the Eldon Country Club in Eldon, MO. If you are interested, please respond to John L. Sanders, 573-751-4211

**Penn State's College of Agricultural Sciences,** University Park, PA - To Lessen the Effect of Bee Stings, Speed is of the Essence - An entomologist in Penn State's College of Agricultural Sciences says bee-sting victims should pluck, squeeze, tweeze or pinch the stinger from the skin -- in short, use any method to quickly get the thing out, because the longer the stinger is in the skin, the more venom is injected.

For years, conventional wisdom advised scraping stingers from the skin, on the theory that squeezing the sting site would squirt even more venom into the unfortunate sting recipient. Not so. Scott Camazine, assistant professor of entomology at Penn State, collaborated with P. Kirk Visscher, associate professor of entomology at the University of California -Riverside, to prove that the faster the stinger is removed, the less venom is injected into the skin. Both scientists have been stung more times than they can count, and their experience suggested that quickness is better than using the old recommended method.

"We assumed the longer the stinger was in, the more venom was injected, but we couldn't prove it," Camazine says. "So, it seemed the logical step was to inject

venom into subjects and observe what happened at different dosages."

Camazine and Visscher believed welt size associated with a sting can indicate how much venom has entered the skin. In the name of science, they sacrificed their own comfort by injecting various quantities of bee venom into their skin. Sure enough, the sting welts enlarged as more venom was injected.

Unlike wasps or yellow jackets, bees can sting victims but once, because they literally lose their rear ends in the process of stinging. The study points out that honey bees rip out parts of their abdomen, as well as nerves and muscles, as they sting. These parts remain with the stinger and continue to pump venom out of the sac.

"Diagrams in books on the anatomy of a bee show a structure labeled the 'venom sac bulb,' so the conventional wisdom -- to avoid squeezing the sac -- made sense," Camazine explains. "In reality, the venom is pumped out like a valve on a water pump. It's more of a mechanical operation."

The researchers decided to test several removal methods to test whether squeezing the stinger caused venom to be pumped out faster. The scientists measured the size of the resulting welts after scraping and pinching the stingers out at various time intervals. They then measured the size of the welt left by the sting. This experiment showed that no matter what removal method was used, the longer the stinger stayed in, the more venom was injected.

The researchers also allowed themselves to be stung in order to remove the stinger immediately using the scraping method and a variety of squeezing or plucking methods. They found that the method of removal made no difference in welt size.

"There are so many tales about cures and salves for ailments that sometimes you find that conventional wisdom is indeed wisdom," Camazine says. "In this case, it is not."

To contact Scott Camazine, please call (814) 863-1854

**Lincoln University** – Soliciting door prizes for distribution at the 2<sup>nd</sup> Annual National Small Farm Conference to be held in St. Louis on October 12-15, 1999. Contact Ms. Troy Darden, 573-681-5587.

**Jefferson College** – Hillsboro – Beekeeping Course taught by Jim Buxton - \$39.00 – Sept. 14-Oct. 5, 6:30-

8:30PM – contact Jefferson College 636-797-3000 or Jim Buxton 314-274-2096.

## ***Director's Digest***

No report received by press time.

## ***Fun Fact***

Poppea, the beloved wife of the emperor Nero, instructed her servants to put a mixture of honey and asses' milk on her face regularly to keep the skin smooth and youthful.

Page 29, *A Taste of Honey*  
1995 Charwell Books, Edison, New Jersey

## ***Pollination***

### **Watermelon crops get boost from bees**

Stephens has something in common with the furry animal his community is named after. He, like bears, has an appreciation for and fascination with a thick, sweet, amber liquid called honey.

"My grandfather was a beekeeper. I would go with him to the hives and harvest the honey," he said. "I became hooked and was intrigued then and have remained so to this day."

Stephens began his adventure as a beekeeper with two hives in 1967.

After losing his right arm in an accident at Georgia-Pacific in 1992, he retired and now spends much of his time attending to his 60 hives. He intends to expand to 100 in the future.

The hives are scattered in strategic locations throughout Mississippi including Lawrence, Jefferson Davis, Simpson and Harrison counties.

"Bees work double duty. They make honey and they also pollinate fields," he said. "Farmers know their crops will increase with additional bees working, so they are eager to rent the hives."

A rental fee of about \$50 each provides additional revenue for beekeepers. Often, farmers request as many as 35 hives to ensure that their crops are fully

pollinated, he said. Crops like melons rely solely on bees for pollination.

"The reason Carson is famous for producing an abundance of sweet, juicy watermelons is, in part, due to the fact that many of the melon farmers rent hives," Stephens said. "Farmers have said that they have increased crops threefold by placing hives near their fields."

Beekeepers stay busy renting hives to farmers during the planting and growing season. Their own harvest of honey is twice a year, once in the late spring and again in early fall, Stephens said.

Each hive is divided into layers that are called supers. The three different types of supers are shallow, medium and deep. Supers hold 10 wax frames where bees transform nectar from flowers into honey.

In each hive, thousands of bees work in different capacities to ensure their species continues, he said. Each hive contains workers, drones and a queen.

The workers, sterile females, do all the work the hive requires while the drones, male bees, have one function, to fertilize eggs laid by the queen. Stephens said the queen also has one function: to reproduce.

Workers gather food, pollen and nectar, from flowers. The average life span of the worker bee is incredibly short - about two weeks - he said. They literally wear their wings out.

"That is where the saying 'busy as a bee' originated," said Stephens. "They are constantly moving and working all the time." The queen has to be removed and replaced every two years, he said. Beekeepers do this to ensure the hives do not become overpopulated.

Often, it is very difficult to identify and find the queen bee, he said. It takes a skillful eye, and even then, it is difficult and time consuming. If the hive has too many occupants, the queen will leave to find a less crowded shelter, he said. When this happens, bees have a tendency to swarm. Smoke is used to settle and sedate the bees. Each super has to be evacuated before the frames can be removed, he said.

After that, the top layer of wax on each side of the frame is shaved. Four are placed in a large container with a handle that is called an extractor.

As the handle of the extractor is turned, the honey is slung out of frames by centrifugal force. When all the honey is removed, the frames are turned, and the process is repeated until all the honey is removed. The honey is strained to remove any particles of wax, he said. It is then heated to about 150 degrees, restrained and poured into a large waiting vat.

The final step is filling clean, quart jars with the delicious amber liquid. The jars are then sealed, and the honey is ready for the table. Stephens has a deep respect for the honey bee and its product. "When God told Moses the promise land was the land of milk and honey, Moses must have known immediately that it would be a paradise on Earth," he said. "After all, God used what is known as the two perfect food sources to describe what it would be like." Meantime, Stephens stays as busy as a bee in Beartown. "Mississippi is the land of honey," he said. "I would like to see more people become interested in beekeeping."

*DrbraA Johnson  
The Daily Leader, Beartown - B.H.*

## **News from the Local Associations**

Eastern Missouri Beekeepers – upcoming events, contact Program Chairwoman, Joy Stinger (314-862-0509) for additional information:

October – Mead making

November – Honey cooking contest

## **120 Year Old Observation Hive**

**Matthew flrdeckl@ix.netcom.com**

Someone called me with a truly unusual bee-hive removal. Their stone-built house was constructed around 1880. Halfway up the stairwell was a 2' by 1' glass pane which opened into the wall. Bees resided behind the glass pane and went about their business as if no-one could see in.

The homeowners of 25 years had never opened the beehive, simply co-existing with them. No obvious damage was ever done to the inside of the house since it was constructed of fir timbers surrounded by stucco.

When they hired a crew to replace their roof, the bees took exception to this idea and sent the noisy 'trespassers' scurrying - which is why the homeowners called me to remove the bees. The owners think the hive was built for the tenants to retrieve honey simply by opening the glass door. There used to be a door at both ends of the stairway, which they suspect was used to trap the bees from entering the remainder of the house.

The house used to be a stagecoach stop when there were no other houses within 10 miles or so (according to someone who stopped in to visit the house whom lived in there from 1910-1917). No information on the beehive was discussed with this person when they visited. Today the house resides on the outskirts of South-Denver and is surrounded by housing developments and office buildings.

Upon opening the glass, I found the brood directly behind the glass, so I'll assume the bees kept warm from the house. The hive was split between fir 2x4's which had 1" holes drilled between them (for? bee-access?). One side of the hive contained the brood - which ran probably four feet up & down, by what looked to be 18" from timber to timber. The other side of the window was 100% capped honey (same dimensions). This honeycomb was SO hard it literally cracked like concrete when enough force was applied. I was able to remove comb in both directions around 12-15" up & down from the top & bottom of the window, but the old comb appeared to continue 'forever' up the wall. The bottom appeared to stop within arm's reach from the window. What I found MOST curious of this hive was that it was only 3"-4" in width, stopping at the outside Fir boards (followed by 18" or so of stone).

If the builders wanted to keep bees for honey, why would they make the hive so shallow at the window? These bees DID build most of their comb surrounding the window, but I'm wondering if this was planned by the hive-builders. If so, the builder knew something about bees as the outside entrance ended within 2" of the inside window ....as bees prefer to build as close to the entrance as possible (the entrance was a well-constructed 1" hole drilled through the framing). Coincidence or did someone capitalize on some bees which invaded their stone house?

For those whom are curious how I kept the bees from entering the house, I draped large drop-cloths on the stairwell and used my bee-vacuum to remove the majority.

## Mites

In the spring of 1993, entomologist Maryann Frazier encountered a mystery. "Beekeepers began calling to report that they had no bees in their colonies." "When bees don't have enough food over the winter, beekeepers often will find a big cluster of dead bees in the colony. But these keepers were saying that not one bee was left in their colonies. This was very weird. They had seen bees making flights in February, but by April, there were no bees. What happened to them?" Frazier's investigation into the reasons the bees disappeared continues today. If she and her colleagues can't unravel the mystery of why bee colonies are dying, beekeepers, fruit and vegetable growers, and consumers all are likely to feel the consequences.



Imported from Europe nearly 400 years ago, honey bees spread rapidly throughout the New World. Currently, about 120,000 beekeepers own approximately 3 million colonies of honey bees across the United States. The bees produce a variety of beneficial products, including about 200 million pounds of honey valued at approximately \$125 million each year and some 3.9 million pounds of beeswax valued at about \$7 million. They are especially valued for the important role they play in pollinating crops. Domes-dictated honey bee hives can be placed wherever and whenever they are needed, and many beekeepers rent their bees, moving colonies several times during the season to help growers pollinate almonds, apples, blue-berries, peaches, strawberries, and other crops. Across the country, more than 2 million honey bee colonies are rented for pollination each year. Nationwide, about \$10 billion worth of crops are pollinated by honey bees.

The empty bee colonies raised an alarm about the state of these valuable pollinators. If you're imagining a summer without bee stings, you also should imagine a diet without apples, berries, cherries, melons, pears, plums, pumpkins, and other fresh fruits and vegetables - not to mention honey. "Pennsylvania apples alone are 95 percent dependent on bee pollination," says Frazier.

Millions of honey bees have died in the United States over the past five years, eliminating some beekeeping operations and creating a critical shortage of honey bees for pollination in some areas. In 1981, Pennsylvania had 85,000 commercial honey bee colonies. By 1995, the number had plummeted to less than 27,000 colonies. "That year, some large beekeepers lost 50 to 75 percent of their colonies," Frazier says. "Some beekeepers were wiped out. Because of the



shortage of hives available for rent in Pennsylvania and other states, growers face higher pollination fees charged by beekeepers. Many growers--especially smaller orchards--have had trouble finding bees to rent for pollination." To help growers find pollination services, the entomology department maintains a list of beekeepers with hives to rent, which is available through Penn State Cooperative Extension county offices. Frazier and her colleagues also prepared a publication, *Hives for Hire*, which offers advice on how to contract with beekeepers, place colonies for maximum effect, and assess the strength of colonies.

Once, abundant wild colonies provided a measure of pollination security for fruit and vegetable growers. Today, wild honey bees are nonexistent in many areas. Homeowners have reported a near-absence of honey bees in their gardens. Estimates vary, but the Northeast may have lost 80 percent of its wild honey bees since 1990. Of the 13 wild colonies Penn State researchers located in the fall of 1995, 11 died during the winter of 1995-1996.

Researchers have identified suspects in the colony deaths. Two parasites, tracheal mites and varroa mites, have been found in most of the weak and dying colonies. Tracheal mites are microscopic creatures that infest bees' breathing tubes. First found in the United States around 1983, they penetrate the tracheae of honey bees and feed on their blood, which damages the tracheal walls and may block the bees' breathing passages. Varroa mites, which appeared in this country in 1987, are external parasites large enough to be seen with the naked eye. These brownish-red, oval mites feed on the blood of both adult bees and the brood, or developing bees.

The situation has become so critical that the Department of Entomology recently hired a new faculty member to address the mite and disease problems afflicting honey bees. Scott Camazine specializes in honey bee research. In addition to his background as an entomologist, Camazine brings his training as a medical doctor to bear on the maladies affecting honey bees.

Camazine, Frazier, and others in the College are leading a multistate research and extension program aimed at fighting parasitic mites and educating beekeepers on the latest management practices. The effort, which includes faculty, post-doctoral scientists, graduate students, and technical staff, brings together land-grant universities, state departments of agriculture, and beekeeping organizations in Pennsylvania, New Jersey,

Delaware, and Maryland. The College administers the program, conducts research, and provides training and information on honey bee management to extension educators from the four states.

"During the winter of 1995-1996, colony losses ranged from 40 percent in Delaware to 53 percent in Pennsylvania to 80 percent in Maine," says Camazine. "We had a long, cold winter followed by a wet spring that year, but weather alone wouldn't cause such severe losses. The typical, average over wintering colony loss in Pennsylvania was just 10 percent before the arrival of tracheal mites."

While researchers can place tracheal and varroa mites at the scene, they're not certain exactly how--or even whether--the mites themselves cause bee colonies to die. For instance, damage by varroa mites to individual bees is difficult to detect. Instead, researchers blame the colony deaths on "parasitic mite syndrome." "We believe tracheal and varroa mites are the major contributing factor in these colony deaths, but viruses and other pathogens, possibly transmitted by the mites, also may be involved," Camazine says. "We need to solve the mystery of exactly why these mite-infested bees are dying. Do infested bees have a lower cold tolerance? Do the mites directly damage bees? Do they spread viral infection or weaken the bees' immune system, allowing other diseases to kill them?"

Bees always have been subject to diseases, parasites, and predators. Some affect the brood, while others affect adult bees. Nosema, a protozoal infection, attacks the cell lining of a bee's digestive tract, giving it diarrhea and decreasing its life span. Chalkbrood is a fungal disease that kills developing larvae and pupae, giving them an appearance like moldy bread. Neither of these are significant threats to the entire colony, but the researchers suspect that mites may put stress on the colony, raising the impact of otherwise minor diseases. The end result is poor brood production, a dwindling colony population, and eventual colony death.

The researchers' first goal is to determine exactly how mite and mite-related diseases affect the health and productivity of honey bees. "With very difficult disease problems, we need to understand the pathology and physiology of the problem step-by-step," says Camazine. "We're interested not just in killing the mites, but in figuring out how the mites are killing the bees."

To identify pathogens possibly associated with the mites when the colonies start to die, the researchers plan to gather bees from mite-infested colonies in late



winter and early spring. They will examine these bees for bacterial pathogens and use electron microscopes and laboratory tests to look for viruses. "Then we'll check the colonies in late spring to assess their survival," Camazine says. "This will help us identify pathogens that may be contributing to parasitic mite syndrome. To determine whether pathogens can be transmitted between the mites and the bees, we will attempt to infect varroa mites by letting them feed on diseased bees. Then we will try to transmit pathogens to newly emerged bees by having infected mites feed on them."

The researchers also will study how tracheal mites affect bees. "Tracheal mites may have a direct physical effect on the bees' ability to breathe, but even large numbers of mites within the trachea are unlikely to completely stop air flow," Camazine notes. "We think these mites may have a more subtle pathological effect. In summer, when it's warm, infested bees may be able to fly normally. But in early spring, when temperatures are cool, these bees may be unable to sustain flight and body temperature because they can't breathe efficiently."

To test that theory, Camazine wants to get the bees exercising and measure their activity, just as doctors do when humans with heart disease take exercise tolerance tests. He and Penn State biologist James Marden are conducting flight endurance studies of bees at room temperature and comparing the results with flight performance tests conducted at colder temperatures. They also are investigating whether any measure of flight physiology changes when bees are infested with tracheal mites. "Since mites attack the breathing tubes that supply the bee's flight muscles with oxygen, perhaps infested bees don't get enough oxygen to their flight muscles," Camazine explains. "These muscles may atrophy as a result of mite feed-ing, and the bee may be unable to fly or maintain its body temperature." To find out, the researchers are measuring the bees' carbon dioxide production. "We put bees in a sealed chamber with oxygen flowing through it," Camazine says. "Then we test the gas emitted for carbon dioxide. The amount of carbon dioxide the bees exhale is a measure of their metabolic rate. When we strike the chamber so the bees fly around, we can compare the amount of carbon dioxide they give off when exercising. This will tell us if there's any difference in the endurance of healthy and infested bees."

If there is a difference, it could explain the absence of bees in some dead colonies. "During winter, bees eat honey, but they won't defecate inside the hive," Frazier explains. "Instead, they wait for a relatively warm day

to go outside. Infested bees in cold weather might go out for cleansing flights, but if they can't get their metabolic rate and flight capacity up to what it should be, they can't return from the flight and die in the field."

Tracheal mites also may have an indirect effect on bees by impairing their immune systems and making them more susceptible to pathogens. Working with entomologist Diana Cox-Foster, the researchers are looking at enzyme systems that bees use to fight disease. "While sucking the bee's blood, tracheal mites also inject saliva and other substances that the bee's body reacts to," says Camazine. "The tracheae tend to get very dark and blackened, a reaction that may be caused by the enzyme system we are studying. Perhaps a response to the tracheal mite saliva prevents air exchange across the tracheae, or perhaps the bees are mounting an immune response against the tracheal mite injections that causes some inadvertent damage to their own bodies. We have to find out more about the honey bee immune system in order to use what we discover to deal with the problem."

Since mites, especially tracheal mites, may adversely affect honey bee queens, the researchers also embarked on a project to look at the health and productivity of honey bee queens. "Many beekeepers reported a loss of queens," says Camazine. "We wondered whether the mites were affecting queens directly. There are about 40,000 workers in a colony, and one queen, who lays all the eggs. If she doesn't lay eggs well, the colony will be weak and there won't be enough bees to sustain the colony. We need to know whether tracheal mite infestation of the queen is a significant factor in poor colony performance."

To find out, the researchers obtained new queens from commercial breeders and collected data on tracheal mite infestation, queen ovary development, and other factors. In the course of this effort, the researchers examined queens from commercial breeders across the country. "We ordered 15 queens from each breeder, then performed autopsies on them," says Camazine. "We analyzed the pheromones they give off, which control colony behavior. We looked at the thorax for tracheal mite infestation and the intestine for nosema disease. We took out the ovaries to assess their quality and measured levels of sperm stored in the spermatheca, the little sac that holds the sperm after the queen mates. We found remarkably variable results." Almost 75 percent of one breeder's queens were infested with tracheal mites, while another had no infested queens. About 40 percent of some breeders' queens were infected with nosema. "We were surprised

to find that much disease among the queens supplied by breeders," Camazine notes. "These findings should alert beekeepers that not all queens are of equal quality. We're also sending individual letters to the breeders explaining the results of our study, which should suggest that they need to keep their queens healthier."

Since queens play such a major role in the health of an entire hive, having beekeepers requeen their colonies more frequently might be a quick fix for some mite problems. "The current recommendation is to requeen every two to three years," Camazine says. "But it costs only \$10 to requeen a colony, while a new colony can cost up to \$50. Requeening wouldn't solve the mite problem, but it could be an important component of an integrated approach to mite management for beekeepers."

Any new mite management strategies are likely to be eagerly embraced by beekeepers. "Beekeeping is no longer possible without close attention to mite control, but there are few proven options available to protect colonies," says Frazier. "Unless new control methods are developed and beekeepers are educated on proper management practices, we expect continued losses of colonies in the years to come. An effective program for controlling parasitic and mite-related diseases will incorporate a number of different control methods and practices. You can't just rely on chemical control, because the mites will develop resistance over time. Our goal is to develop methods that are safe, effective, sound, economical, and long term."

Currently, only one material--Apistan--is available for treating varroa mites. "Mites in Italy develop resistance to it within five years," notes Frazier. "If we lose this material, we have nothing to replace it with." Desperate beekeepers are trying everything they can to keep their hives alive. "They are using the materials that are registered for control, like Apistan strips for varroa mites," Frazier says. "But because that's the only thing that's available, the price for Apistan keeps rising, and the beekeepers are very discouraged. In addition, beekeeping is such a small industry that chemical companies may be reluctant to invest in registering new materials."

A variety of alternative synthetic and botanical compounds, especially essential oils, are being marketed as mite control agents, including thymol and winter-green oil. "But more work needs to be done to determine whether any of these agents are effective for mite control," Frazier says. "There's no published data that

proves they are effective mite treatments."

Other materials that do show promise aren't yet legal in this country. Formic acid, legal in Canada, is naturally present in honey. Some insects produce it as a defense mechanism. Because it's extremely caustic, mites are unlikely to develop resistance to it. "Some beekeepers feel that the approval system is not acting fast enough," Frazier says. "A lot of work has been done to show that formic acid is effective and can be used safely. Beekeepers read these things, and even though it's not approved, they see no reason not to use it."

But formic acid needs to be applied over a long period of time. Most beekeepers are using it in liquid form, which evaporates in a day or two, so they have to re-apply it six to eight times. Research associate Jennifer Finley is collaborating with U.S. Department of Agriculture scientists to study a slow-release formic acid gel. "New, safer formulations, such as the incorporation of formic acid into a gel, would let beekeepers put it on once or at most twice. It will last in this gel, which evaporates slowly over a period of several weeks," she says.

The researchers also are looking for resistant strains of honey bees. "We have evaluated strains of honey bees reported to have some resistance to mites," says Camazine. "So far, these strains have not showed significant resistance, but we are still evaluating one strain of bees."

Until the researchers can pinpoint exactly why the colonies are dying and develop specific management techniques, a general guideline is that more seems to be better when it comes to controlling mites. Finley and her colleagues asked beekeepers to provide information on their colony losses in the 1995-96 season, including the time of year colonies died, the mite and disease incidence in their colonies, and the treatments they applied after harvesting honey. Of the 6,054 colonies included in the survey, 3,030 died during the winter. "Fifty-three of the 252 beekeepers who responded did not apply any kind of treatment for mites or disease," Finley says. "On average, these beekeepers lost 71.6 percent of their colonies, which was significantly higher than the loss rates of beekeepers who applied at least one treatment." Apistan was the most popular treatment, with 70 percent of beekeepers using it. Other beekeepers applied menthol for tracheal mites, Fumidil-B for nosema, or grease patties infused with an antibiotic. Each individual treatment reduced average colony losses at least marginally, and the antibiotic patties, Apistan, and Fumidil-B significantly decreased

losses. Twelve beekeepers who treated with a combination of anti-biotic patties, menthol, Apistan, and Fumidil-B had the lowest colony loss rate—about 25 percent. "These bee-keepers really reduced their losses compared to those who didn't treat at all," says Finley. "Those who are treating aggressively are having the best luck keeping overwintering colonies alive. Our recommendation to beekeepers is to hit mites with everything you've got. Many beekeepers tend to skip antibiotic and Fumidil-B treatments. These don't treat mites, but they really help mite-infested colonies."

To spread the word about managing the mites, Frazier, Finley, and Camazine talk to beekeepers at meetings and maintain a World Wide Web site that includes information on current research and recommendations (<http://www.psu.edu/dept/bee/hive/index.html>). They publish a regional newsletter called *Bee Aware*. They also developed the Bee Aware expert system, a computer-based tool that includes an informational module, as well as a module that beekeepers can use to diagnose diseases and get information about how to treat them.

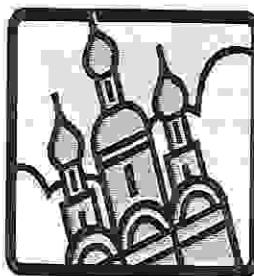
The honey bee outlook for the near future is mixed. "Colony losses weren't as bad in 1996 and 1997," says Frazier. "We don't know precisely why. The winter wasn't as harsh, which might have helped. The bees may be developing some resistance, the disease may be going through cycles, or the beekeepers simply may be treating more aggressively. Also, in the previous season, so many infested colonies died that we decreased our load of diseased colonies. There wasn't as much transmission of disease from one colony to another, because a large proportion of mites died with the infested colonies. The 1995-96 winter was particularly bad, and it may be another five years until it's that bad again. But beekeepers can't afford to be complacent."

*Faculty and staff referenced in this article are Scott Camazine, assistant professor of entomology; Diana Cox-Foster, associate professor of entomology; Jennifer Finley, research associate in entomology; and Maryann Frazier, senior extension associate in entomology. James Marden is an assistant professor of biology in the Eberly College of Science. Research discussed in this article has been funded by the Pennsylvania Department of Agriculture and the Fund for Rural America of the Cooperative State Research.*

## Russian Honey Bees Showing Mite Resistance in Study

Russian honey bees showed clear resistance to varroa mites last year in a comparative field trial that ran from June to November, according to the Agricultural Re-

search Service. The same experiment is continuing this year. Earlier data this year indicated that Russian honey bees would probably not require a spring treatment for varroa. June data continue to support this interpretation. Russian colonies have finished the major springtime peak of drone brood production and the increase of mites in the colonies remains acceptable. The overall average number of mites in Russian colonies is about 3,900.



One Russian colony has large numbers of mites. Without this colony, the average for the remaining 18 colonies is about 3,000 mites. Domestic colonies are dying; 13 of 20 have been removed from the experiment because of death due to varroa.

Although domestic colonies are becoming smaller because of loss of bees to mites, the average number of mites in domestic colonies is about 10,000. What Russian colonies will do with the mites they do have during the summer months is critical in determining whether the Russian colonies will require a post honey production chemical treatment. However, it is clear that they did not require a spring treatment, the ARS concluded.

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## New Booklet Aimed at Grade School Students

"Let's Buzz the Schools" booklet is a continuing effort to bring agricultural education to the general public, elementary school teachers and their school children. This booklet contains lesson plans, illustrations, vocabulary, and reference materials. It is designed for children in kindergarten through fifth grade and will hopefully change some attitudes about a very important industry. Beekeeping lesson plans are developed for each appropriate grade level. Teachers have a choice of what lesson plans to teach and can use as many as they have time for. They do not need to have a back-ground in beekeeping because materials with the necessary information are provided with answer sheets.



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The bee industry is also besieged by more problems than we can puff a smoker at. Americans would stop eating foreign honey if they knew the terrible impact that this unfairly priced imported honey was having on our industry. Home gardeners would be more aware of the care they should take in applying insecticides if they knew the value of bees to their gardens.

Education and information is the key. We need to work very hard to inform the public as well as our legislative officials about the importance of honey bees to mankind.

As beekeepers we should make every effort to get at least one copy in each of our local school libraries, etc. To obtain a copy and pricing, please contact Loretta Surprenant, Box 300, Essex, NY 12936 or call 518-963-7593.

April/May/June 1999  
Honey Producer Magazine

## ***The Small Hive Beetle, Aethina tumida, A New Beekeeping Pest***

Keith S. Delaplane, Associate Professor of Entomology, The University of Georgia, USA

**Order** *Coleoptera*: **Family** Nitidulidae

**Description:** Adults and larvae of the small hive beetle are found in active bee hives and stored bee equipment where they feed on honey and pollen. Adults are broad, flattened beetles about 5-7 mm (¼ inch) long and dark brown to nearly black in color. Adults are red just after pupation and soon thereafter become blackish. They move rapidly across comb and are difficult to pick up. The larvae are elongate, whitish grubs with rows of small spines along the back. Larvae look superficially like wax moth larvae, but the legs of beetle larvae are larger, more pronounced, and restricted to near the head. Beetle larvae do

not spin webs or cocoons in the bee hive but rather pupate in the soil outside the hive. Pupae are whitish brown. The small hive beetle is native to southern Africa where it requires 38-81 days to develop from egg to adult, and five generations per year are possible. The first record of this beetle in the western hemisphere was determined from a commercial apiary in Florida in May 1998. Beetle specimens were found from bee hives near Atlanta, Georgia in June 1998 and confirmed as *A. tumida* on July 13, 1998.

**Damage:** In Africa the small hive beetle behaves as a scavenger of weakened colonies much like the greater wax moth, and it is relegated to secondary pest status. But that has not been the experience of Florida beekeepers in whose apiaries the beetles have caused considerable damage and colony loss. Beetle larvae tunnel through combs, killing bee brood and ruining combs. Larvae can heavily damage delicate, newly drawn-out comb; however, old sturdy brood comb seems to withstand heavy larval infestation without disintegrating. Bees in Florida have been found to abandon combs and entire colonies once they are infested. Beetles defecate in honey and cause it to ferment, producing a frothy mess in supers and honey houses. Honey thus contaminated is no longer salable, and moreover it is unpalatable to bees and cannot even be used as bee feed. Florida observers report that the fermented honey smells like rotting oranges. In heavily-infested operations in Florida larvae by the thousands have been observed crawling out of colony entrances or across honey house floors in an effort to reach soil to dig in and complete their development.

It is cause for concern that the beetle's behavior in Florida has been much more virulent than that reported from Africa. Such is often the case with pest organisms when they are imported to new locations without their natural assembly of diseases, predators, and parasites that keep their populations in check.

**Control:** There are no chemical control measures developed or approved for this pest. If *A. tumida* is suspected or detected, the following precautions are suggested:

1. Be clean around the honey house. Do not leave filled supers standing long before extraction. Do not leave cappings exposed for long periods. Beetles can build up rapidly in stored honey, especially away from protective bees.

2. Do not stack or store infested supers onto strong colonies.

3. Be aware that supering colonies, making splits, exchanging combs, or use of Porter bee escapes can spread the beetles or provide room for beetles to become established away from the cluster of protective bees.

4. Monitor colonies for hygienic behavior; ie., the ability to actively rid themselves of both larval and adult *A. tumida*. Propagate those queen lines found to be beetle-resistant.

5. Experiment with trapping or cultural control measures. It may be possible to trap beetle larvae as they attempt to reach soil and pupate. Moving colonies may be advisable to keep a beetle population from building up in any particular apiary. The ability of beetles to complete development may vary according to different soil conditions and beekeepers may find some locations naturally less prone to beetle infestation. Fire ants may be a beneficial insect in this context if they are found to prey on pupating beetles.

6. Bees will normally not clean up equipment or supers full of beetle-fermented honey. However, bees may finish the job if the beekeeper first washes out as much honey as possible with a high-pressure water hose.

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\_\_\_\_ Legal Advisor

\_\_\_\_ Historian

\_\_\_\_ Program Committee – March & Oct.

\_\_\_\_ Chairman

\_\_\_\_ Facilities

\_\_\_\_ Arrange speakers

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\_\_\_\_ Registration

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\_\_\_\_ State Fair – August

\_\_\_\_ Over-All-Coordinator

\_\_\_\_ On-Site-Manager

\_\_\_\_ Schedule Manning

\_\_\_\_ Information Display

\_\_\_\_ Sales Display

\_\_\_\_ Auditor

\_\_\_\_ Legislative Dinner – Feb. or March

\_\_\_\_ Centerpiece

\_\_\_\_ Food

\_\_\_\_ Serving

\_\_\_\_ Governor's Conference – Dec. 2000

\_\_\_\_ Centerpiece

\_\_\_\_ Food

\_\_\_\_ Serving

\_\_\_\_ Newsletter

\_\_\_\_ Editor/Set-up/Type

\_\_\_\_ Advertising

\_\_\_\_ Reporter

\_\_\_\_ Apitherapy Resource Person

\_\_\_\_ Cookbook Committee

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\_\_\_\_ Representative to the Honey Producers Association – January 2000

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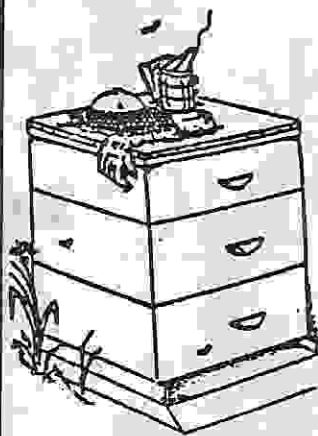
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\_\_\_\_ Name

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