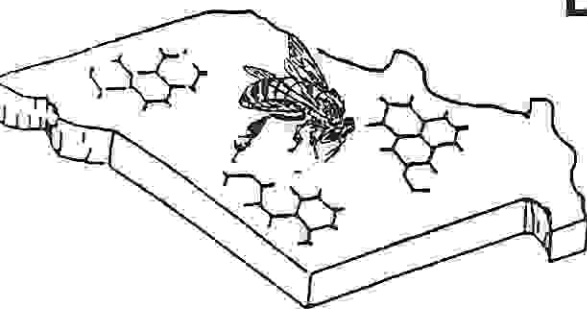


Fall 1993

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FALL 1993

BANQUET AND AUCTION FOR HONEY QUEEN PROGRAM

For those of you who did not attend last year's fall joint Missouri-Kansas meeting, we combined an auction to benefit the Queen program with the banquet. It turned out not only to be profitable for the Queen program but a fun-filled evening for everyone. Therefore, we have decided to do it again this year at our fall meeting. The banquet and auction will be held at noon on Saturday, October 9.

We are asking that anyone with something to donate to the auction please bring it along. Last year we had a great variety of things to auction off. There was everything from used beekeeping equipment (in good condition), new beekeeping equipment, flower arrangements, sweatshirts, wall hangings, a painting, some quilts, and about anything else you can think of. So, if you have ANYTHING to donate, please bring it. Anything you bring can be turned in to the treasurer, Ron Vivian or any of the other officers that are there on Friday evening. If by some chance you are not going to be able to attend the meeting but you have something which you would like to donate to the auction then just give it to a member of your local association who is coming. We sure would appreciate it, because the more we have to auction, the more money we will have for the Queen fund, and the more fun we will have.

Cash donations will also be accepted at anytime. Julie Batton is Missouri's very first Honey Queen and she has an excellent chance to win the national competition at the American Beekeeping Federation conference in January 1994. We are very lucky to have such an outstanding candidate, so we need to give her our full support.

Hope to see you at the meeting and the AUCTION.

Glenn Davis

FROM THE EDITOR

As happens occasionally, bees have been in the news lately. Some is good news and some is not so good news, but that's the way it usually goes.

First the bad news, since it came first in July. The first fatality was recorded from Africanized bee stings in the United States. The details were available in the papers and probably on radio and television. A man was trying to eradicate a colony of bees from the wall of a building by dousing them with gasoline; in itself not a recommended procedure, but with Africanized bees, even worse.

The second and better news also involved bee stings. A related article is printed in this issue of our newsletter. I did not see the story, but a television program evidently carried an item about the use of bee stings as therapy for arthritis and multiple sclerosis. This news was conveyed to me by several people I talked to at a craft fair where I was selling honey a day or two after the show aired in August. No one mentioned the man who was killed by multiple bee stings.

This indicates one or two things to me. One is that people remember the most recent news they have heard in relation to a particular subject, in this case honey bees. The most recent news was the use of bee stings as disease therapy. The other thought that comes to mind is that people may like to talk about the good side of a subject that is sometimes viewed as not so good, again honey bees.

Of course the honey price support program has also been in the news some lately, but only as a small part of the overall budget negotiations, so this was probably not seen by

the public as either good or bad—just more haggling between the good guys and bad guys in Washington (you can decide for yourself who the good and bad guys are).

Almost everyone who reads this newsletter has bees or has some interest in honey bees. How would you like to be perceived by the public who is familiar with your apicultural interests? As the keeper of killer bees (the common name we can't seem to shake) or the keeper of beneficial, healing serum producers?

If people remember good news better than bad and remember the most recent news best, then the news we should always be putting out about bees should be good and it should be put out often.

Some hopeful news from Canadian Bee Notes by way of Iowa's bee-keeping newsletter. The application of formic acid to honey bee colonies for the control of tracheal mites and varroa mites has shown to be generally effective and has been registered for use against these pests in several European countries. However, the application of liquid formic acid has several drawbacks (that is, obtaining correct dosages, potential hazards to the applicator and multiple applications needed). A Canadian pharmaceutical company is developing a formic acid gel strip to overcome these problems. The company has had the cooperation of Canadian and American departments of agriculture in evaluating initial formulations.

The gel strip is being developed to accomplish several objectives at the same time: to provide a method that requires only one application, to make the method of application easy and safe for the applicator and to provide more uniform evaporation over the treatment period.

It seems that progress is being made slowly but surely in combating both kinds of mites, but there are setbacks along the way. You have probably heard by now that Miticur has been taken off the market. It evidently had some problems with tracheal mite control and mortality to the bees. Sulfa drugs were once a hot item for foulbrood, since replaced by tetracycline. Refinements are made and we are hopefully left the better for them.

PIPING FROM THE QUEEN

Greetings from Mizzou!

Fair season is here again and promotions are picking up. On July 30th, Mom and I traveled to Springfield, MO to attend the Ozark Empire Fair. The Adams hosted our stay and treated me like a real queen! They took us to dinner that night and had flowers awaiting my arrival in the hotel office. The fair went well and we returned home Saturday night.

I arrived at the State Fair on August 19th. While I was there, I demonstrated Honey Poppyseed Bread and Honey Punch, worked in the booth, and also had the pleasure of meeting the newly-crowned State Fair Queen and the 1993 Missouri Watermelon Queen.

On Tuesday, August 24th, I will travel to Jefferson City to meet the Governor and present him with a honey gift basket at the signing of the proclamation to make September honey month in Missouri.

Hope everyone is having a prosperous year!

*Julie Batton
1993 MO Honey Queen*

QUESTIONS NEW BEEKEEPERS OFTEN ASK

Man, since the dawn of creation has been asking himself and others, why? We want to have answers to our questions and have a "reason for which" certain things happen. Our government spends millions of dollars trying to find out WHY.

I have been asked by a number of non-beekeepers WHY I like to keep those little stinging insects. The WHY's for me, are many; I like honey to eat and I get enjoyment and relaxation from working with the bees. I also know that our agriculture program depends, to a large part, on bees. And sometimes I make a little money from my bees.

People often come to me with questions about their bees, starting off with WHY?

WHY did my bees die during the winter?

The answers can be many; maybe they starved from lack of food, if they are found dead with their heads in the cells or maybe they took Nosema during their long winter confinement; or they may have mites--tracheal, Varroa, or both. Did you treat for these diseases last fall, and did you leave plenty of honey for them to eat all winter?

A friend asked WHY are some of my bees so angry, and others are not? What can I do about it?

First, the queen controls the temperament of the hive. They are protecting their young and their food stores, which is a natural instinct, but some are more aggressively protective than others. One fellow said that he moved his hive that seemed angry all the time. It had been positioned where traffic, etc. passed near the hive, so he moved it farther away from activity and they immediately calmed down.

So, location may be a factor.

WHY does one of my hives have only drone brood, but the bees are working and storing honey?

I would say that the queen may no longer be fertile, or possibly she died in late winter. A worker bee can lay eggs, but cannot fertilize the eggs, which will result in all drone brood. Put a new queen in the hive if it has lost its queen, but not yet developed laying workers. If laying workers have developed introduce a new queen along with two or three frames of brood and bees from another hive (a nuc).

You say you lost one of your hives to American foulbrood and the other one next to it is all right. **WHY?** American foulbrood can be spread by used hives, etc., and by drones who are accepted as visitors to other hives and feral colonies and can bring the disease home, spreading it to other colonies. Answer: Treat your colonies with Terramycin and powdered sugar in dry form as a preventative measure. One teaspoon Terramycin per ounce of powdered sugar per colony should be done at 4 or 5 day intervals for about 3 times before and after the honey flow; in the spring and again in the fall. Sprinkle two level tablespoons of the dry mixture on the ends of the hive body frames. Do not use or sell any honey made during treatment time.

WHY do some of my colonies produce 170 pounds of honey, while others with the same care only produce 40 pounds?

The queen again, has a lot to do with the actions of the hive. She may not be laying enough eggs to produce a strong colony of workers. I would also check for mites, foulbrood, or Nosema. And, too, I would introduce a couple of frames of brood and nurse bees from another hive that is strong and can afford

to share their brood. Hives accept these transfers into their midst. The introduction of the extra brood and nurse bees will sometimes be just the boost that will really put the colony to working. A few strong colonies are much better than a large number of weak colonies.

WHY do I lose so many colonies to the wax moth?

Wax moths are destroyers of many weak hives each year. But wax moths only kill problem hives that cannot defend their hive against the invaders. Keep your colonies strong and they will take care of the wax moths themselves. A method I use is to get some two-liter plastic pop bottles; cut a hole about the size of a quarter just below the neck on the shoulder of the bottle. Mix one cup sugar and 1 cup vinegar, pour into bottle; add one banana peel, and fill the bottle to half full with water. Tie a string or wire to the neck of the bottle leaving lid in place, and hang it in a tree near your bee hives. This mixture draws moths, flies, millers, etc., (but not honey bees) into the bottle where they drown when they cannot find their way out. Using a sieve or colander, empty it each day or when it looks full, saving the liquid and banana peel; pour liquid back into the bottle and re-hang it. It is a valuable tool against the wax moth.

WHY do my bees always swarm in the morning and I don't get home until 4:30 p.m. when they are already gone?

The swarm is moving out, and they don't always know where they're going, so they start early. Your problem is not as bad as it used to be. A swarm trap from Scentry helps to save those swarms. They hold five hive body frames and have a four-component lure to attract the scout bees. The lure lasts

one season and the trap will last for years, as you only leave them outside during swarming season. Hang one or two near your bees and go on to work. If you come home and see bees in your trap; don't panic! You can take them out on the weekend, but the sooner you remove the caught swarm and put them into a hive body, the sooner you may catch another swarm in the same swarm trap--a real swarm saver!

WHY do "John's" bees out-perform mine year after year? We work our bees the very same way. We work them on a 10 to 12 day basis. We treat with the same drugs. We even buy our queens from the same breeder. I do notice that "John" takes a little longer than I do because he carries a little book in his pocket, and writes something in it at each hive. I don't understand **WHY**.

"John", after arriving back home, gets out the little book and starts through it. It reminds him that hive number 42 has a broken frame or numbers 28, 31, 47, and 40 need extra supers; and hive number 19's queen isn't laying much. So "John" is prepared when he goes back to his bees. He is redeeming the time now, not 12 days later. Twelve

days can mean a super full of honey. Record keeping is not new. Birth records, for instance, are kept and at the appropriate birthdays, we are bombarded with literature from those hoping to sell us their wares or ideas. Beekeeping records also have to be followed up: they can mean hundreds of pounds more honey and hundreds of dollars more income.

WHY should I belong to a beekeeping association?

You will be with like-minded people, sharing ideas, asking and answering questions. You'll get the latest beekeeping supply catalogs, and you can have a bit input into a beekeeper's association. A group of people gathering and sharing information accelerates our knowledge much faster than when we try to learn on our own.

REMEMBER, to make tracks in the sands of time, don't drag your feet.

Herb Spencer, Beekeeper, President Southwest Missouri Beekeepers Association, RR 1 Box 254-A, Rocky Comfort, MO 64861, 417-652-3388.

Reprinted from *American Bee Journal*, Volume 133, No. 7, July 1993.

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THE HONEY CONSUMER BY THE NUMBERS

If it pays to know your market, here are a few facts that could reap dividends for you:

- Household Age—Peak honey usage occurs in households with a homemaker between 30-34 years of age. Honey usage remains high in households with homemakers to the age of 54.
- Household Size/Children—As household size increases, so does the incidence of honey use. Peak penetrations occurs in families with five or more members. Lowest penetration occurs in single member households. Thus, children are present in honey-using homes.
- Education—As education of male and/or female heads of households increases, so does honey penetration. Peak honey buying is recorded in the households with heads of households with more than twelve years of school.
- Income—In general, as annual household income rises, honey penetration also increases. Top usage occurs in homes with annual incomes over \$50,000.
- Population Concentrations—Honey finds its peak penetration in homes in markets of 50,000 to 250,000 population as well as in large (1,000,000 and over) population markets.
- Geographic Regions—Honey usage is highest in the Mountain and Pa-

cific areas.

In sum, the typical honey-consuming household is upscale - affluent (\$50,000+) and well-educated - and primarily located in medium and dense population centers.

Ask yourself if your marketing and sales efforts are targeting that audience. If they are, you're certainly on the right track. On the other hand, if you believe that your message isn't getting through to that group, perhaps it's time to reevaluate your strategy. Please don't hesitate to write or call us here at the National Honey Board to discuss your plans to grow your honey business.

—Source: Associated Marketing, Chicago, 1991.



NHB BEAR LOGO

The National Honey Board is now making its lovable honey bear logo available to honey packers. With the new labeling guidelines, many of you will be designing new honey labels—what an opportune time to add the bear to your honey jar.

The National Honey Board has implemented promotions as well as advertising in national consumer magazines to increase awareness of the honey bear logo. The familiar honey bear image has earned a warm spot in consumers' hearts—it tells them that your honey jar is packed with wholesome good taste!

Write to the Honey Board to receive your application today. Upon ap-

proval, you will receive honey bear camera-ready artwork and permission to use the honey bear on your honey containers.

NEW RECIPE CARDS FOR SCHOOLS

The National Honey Board has developed new bulk honey recipes for noncommercial foodservice operators such as schools, business and industry cafeterias and colleges.

The recipes are printed on cards which feature other ideas for using honey and usage tips. Recipes include Honey-Lemon Butter for baked fish or chicken. Honey Tomato Sauce for open-faced sandwiches, a pear and honey dessert and Honey-Orange Peanut Butter Spread.

Recipe cards are available on request from the National Honey Board.

ESPY PROCLAIMS SEPTEMBER AS HONEY MONTH

Mike Espy, U.S. Secretary of Agriculture, proclaimed September 1993 as National Honey Month.

The proclamation recognized honey's rich history and flavor as well as the contribution of honey bees to agriculture.

The proclamation concluded: "I encourage all Americans to take this opportunity to enjoy the natural goodness of honey and to recognize the contributions of the honey bee and America's beekeepers."

The National Honey Board's Honey Month publicity efforts will include print, radio and television releases. If you would like to promote honey to your local media, write to the Honey board for a complimentary Honey Month media kit.

COLONY REPRODUCTION BY AFRICANIZED HONEY BEES

Brood Development Biology

Africanized honeybees (AHB) have a shorter development time than European honeybees (EHB). The eggs of AHB hatch in 70 to 71 hours, whereas the eggs of EHB hatch in 72 to 76 hours. In Venezuela the Africanized worker honeybee had a development time of about 19 days from egg laying to emergence. The EHB in Venezuela had a development time of about 20 days, the same as in the U.S. AHB queens also develop about half a day sooner (14.5-day development period) than a EHB queen (15-day development period).

Development times were unaffected by the cell size, the nurse bee, or any comb/nurse bee interaction. Differences between development times of Africanized and European honeybees were noted primarily during the uncapped state. Africanized bees do not warm their nests differently to stimulate faster development. Rather, the difference lies in egg genotype. The AHB also produces more bees than the EHB per unit of time. A shorter development period, from egg to adult, therefore, may be one factor that contributes to Africanized honeybees swarming more frequently.

Swarm Biology of AHB and EHB

One of the most distinctive differences between EHB and AHB is the rate of reproductive swarming. Observations in French Guiana showed that an AHB colony produced between six and twelve swarms a year. During the eight-month season, swarms were produced three or four times, with intervals as short as 50 days. It has been calculated that from an original swarm about 60 colonies can result. The AHB suffered high colo-

ny mortality because of absconding (colony abandonment) and starvation.

In the northeastern part of Mexico, EHB with similar behavior have been observed. Swarms are found almost every month of the year, with peak swarm periods corresponding to two rainy seasons. EHB in unmanaged hives in temperate zones produce only one to four swarms a year. Annual population growth rates for EHB growing season average about a zero to threefold annual increase--considerably lower than the estimated annual increase for AHB. Compared to these EHB swarms, the AHB swarms are small, averaging 5,000 workers, a queen, and sometimes a small number of drones.

If given a choice, Africanized honeybees prefer a larger nest cavity than do EHB. If nest sites are limited, AHB will accept more marginal nest sites than European honeybees would commonly choose. This gives the AHB a wider range of nest choices.

Requeening AHB Swarms

Through a more difficult process than with European bees, Africanized honeybee swarms can be requeened. However, requeening large numbers of AHB colonies in the U.S., even with current technology, would be a time-consuming process. The nervous nature of AHB queens and their dark body color tend to make finding the queen difficult. U.S. commercial beekeepers, using ripe queen cells to requeen European honeybee hives, are only 40 percent successful at requeening after killing the original queen. The behavior of the AHB could make this percentage drop to levels that make requeening a questionable procedure.

Therefore, requeening AHB swarms

with EHB queens is not encouraged in the U.S. Managing AHB colonies through requeening is also not recommended. Their defensive behavior alone can be a threat to the public, farm workers, and beekeepers, as well as to domestic and farm animals.

(Africanized and European honeybees are members of the same species, *Apis mellifera*. They represent populations that have evolved under different environmental conditions. The same basic behavior, biochemistry, and structure are present. However, there are differences in size, range, or frequency of expressions of some characteristics.)

Absconding Behavior of the AHB

Absconding, or the complete abandonment of the colony by all resident bees, frequently occurs in Africanized colonies. European colonies rarely abscond, even in tropical climates. Typically, about 15 to 30 percent of AHB colonies abscond each year, but the rate can approach 100 percent in some areas.

Researchers have reported that absconding swarms depart with twice the honey and bees of a reproductive swarm, and that the absconding swarm may travel as far as 100 miles before constructing a new nest. Absconding is usually caused by colony disturbance or a shortage of food.

Prepared by Dr. James E. Tew, National Program Leader, Apiculture, Extension Service, United States Department of Agriculture (USDA) and the Ohio State University at Wooster, Ohio and Dr. Anita M. Collins, Research Leader, Honey Bee Research Laboratory, Agricultural Research Service, USDA, Weslaco, Texas, in cooperation with the USDA Interagency Technical Working Group on the Africanized Honey Bee.

Varroa mites are becoming a larger problem. If they attack your bees, the financial losses can be devastating.



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HARD TO BELIEVE THERE ARE STILL BEEKEEPERS WHO CAN OVERLOOK A PROBLEM LIKE THIS



FROM THE MO VALLEY BEEKEEPERS ASSOCIATION

Enclosed is a poem we thought you would like to include in the next edition of the Missouri State Beekeepers' Association newsletter. The poem is by one of our members in good standing, Bob Barcus of Union, MO. Bob is a poet with other poems to his credit. This poem will be included in a book of his poems to be published sometime this summer. He is giving permission to publish the poem via this signed copy.

We now have 44 members of our association, of which 30 are members of the Mo State Association, according to our records, so we are supporting your efforts. We're keeping the state fall meeting in front of everyone in hopes of a good attendance.

Gordon L. Davis, Secretary
MO Valley Beekeepers Association
2151 Golfview Drive
Wentzville, MO 63385

JUST A DRONE

When I was uncapped into this
world of busy bees
and I tried my wings on a spring
time breeze
I recognized that I had a special
job to do
but I'd worry 'bout that in a day
or two.
So leave me alone
I'm just a drone
I'll help with the chores tomorrow.

On warm summer days the boys and
I would congregate
and make talk on when we might
propagate
way up above the hives with such
ecstasy
during our audience with her maj-
esty
So leave me alone

I'm just a drone
I'll help with the stores tomorrow.

By fall I'll admit I was fat and a
little lazy
but this increased activity was
driving me crazy
I needed a place of solitude to relax
and think
besides the smell of honey was
starting to stink
So leave me alone
I'm just a drone
I'll help with your chores tomorrow.

My, the guys had told of rumors
about the bitter cold
and when the sun stays low you
know that you're old
but if I could have a taste of that
golden nectar
I would regain the strength to fight
this frigid specter
Don't leave me alone
I'm just a drone
I promise to help with the chores
tomorrow.

Bob Barcus

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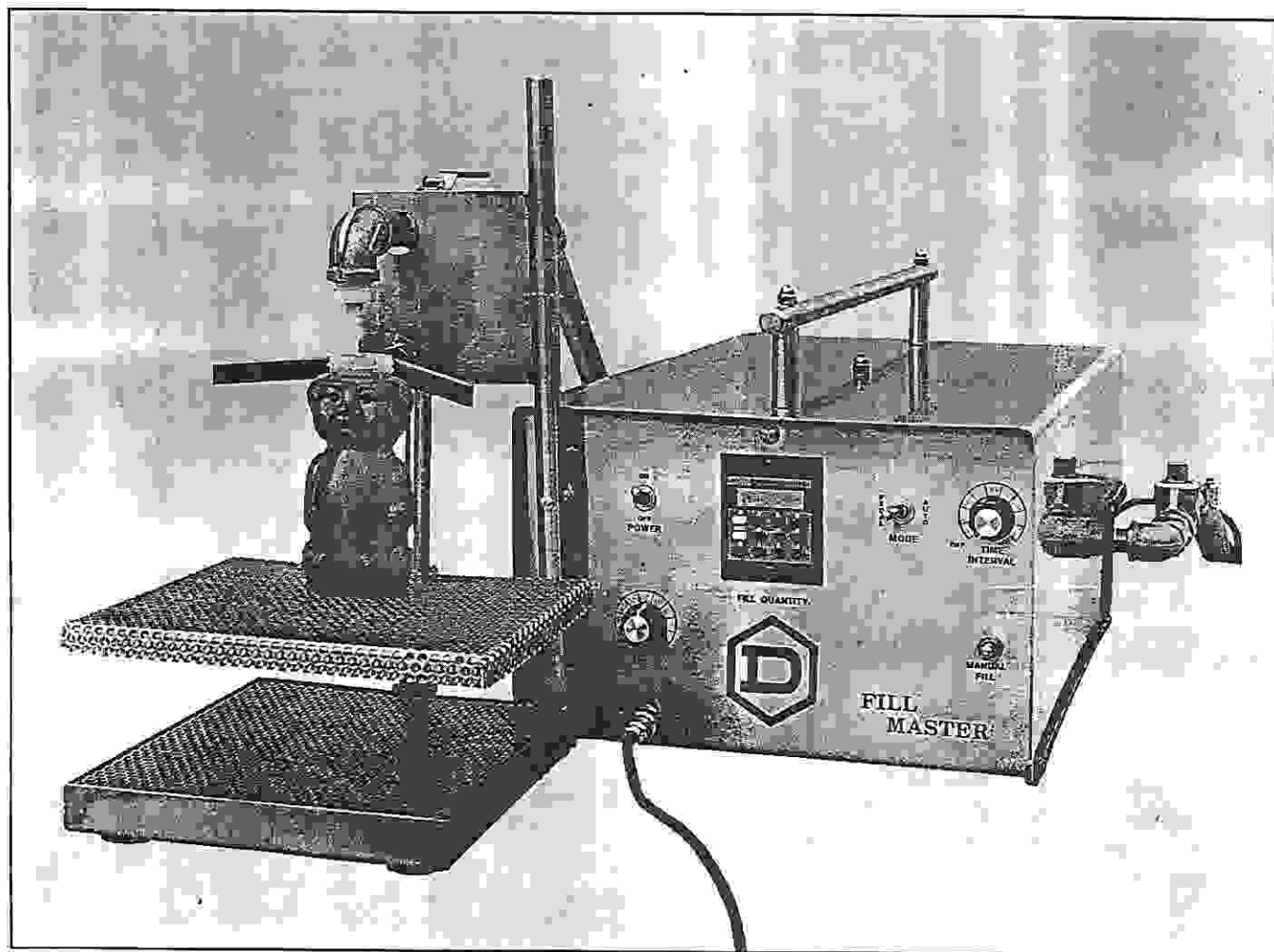
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To the editor:

I will be teaching a third or fourth grade class this coming school year at Fremont School in Springfield. I am planning to teach a thematic unit on bees and am therefore searching for information that may be shared with my students. As a part of this unit, I am planning to emphasize the way in which bees work together for the benefit of the hive. If you have any information or displays that would be helpful in developing this unit, your assistance would be greatly appreciated. I may be reached at 831-3290 or information may be sent to me at 819 North Cedarbrook, Springfield, MO 65802. Sincere Thanks,
Harold Isaak

(Ed. I have sent Mr. Isaak the names of some people in the Ozark Beekeepers Association and directed him to the public library for bee books written for children. How about it Springfield beekeepers, or anyone else who would like to contact Mr. Isaak with bee information? Maybe someone could visit his class with an observation hive and bee paraphernalia.)

HONEYBEES AND ARTHRITIS: SHARPENING PERSPECTIVE ON A STICKY ISSUE

Physicians and patients have been intrigued since ancient times by the possible anti-arthritic properties of venoms. Although a considerable folklore exists for therapy with bee, ant, and snake venoms, published clinical experiences and trials are few. The first modern report may have been in 1910 when Maberly used bee venom to treat two patients with rheumatic fever and one each with neuritis, "rheumatic pains," and "chronic rheumatic arthritis"; the latter patient received 18 stings weekly and then rose from

5'3" to 5'5" in height and "could hold his head up and open his mouth fully and the pains in the joints had almost disappeared"; dramatic therapy indeed. Hollander, in 1941, treated 42 patients with "chronic arthritis" with injectable bee venom; he noted comparable improvement in treated and control patients (19% and 18%, respectively) and concluded "the incidence and degree of improvement were very discouraging." More recently Altman, Schultz, Brown and colleagues confirmed the antirheumatic effects of purified extracts from an ant, *Pseudomyrmex sp.*, in a carefully controlled, prospective, double blind trial of 30 patients studied for 6 months; they found significant improvement in global efficacy, joint pain, and joint swelling; ant extracts had in vitro anticomplementary and lymphocyte inhibitory effects. Preliminary encouraging reports of bee venom therapy for patients with rheumatoid arthritis (RA) and cobra venom factor for collagen induced arthritis in rats have appeared. Several investigators, including Hadjipetrou-Kourounakis and Yianguou in a recent issue of the Journal, have examined effects of bee venom on experimental models of arthritis. Zurier and Weissmann and colleagues appreciated that bee venoms contained phospholipase and other anti-inflammatory substances; they found that whole venom but not phospholipase suppressed development of adjuvant arthritis in part through steroid mediated mechanisms; venoms did not affect established arthritis. Chang and Biven reported that bee venom suppressed carageenin-induced edema and adjuvant arthritis in rats. Adolapin and other purified extracts were isolated from bee venom and were found to be anti-inflammatory in several experimental models, but usefulness for human disease appeared limited by the

high cost of purification.

Hadjipetrou-Kourounakis and Yiangou related several observations regarding adjuvant arthritis and its treatment by honeybee venom. They suggested that (1) honey bee venom injections suppressed adjuvant arthritis, (2) honey bee stings suppressed adjuvant disease, (3) venom reduced certain B (splenocyte plaque forming cell) and T cell responses, (4) venom suppressed normal and adjuvant rat interleukin-1 (IL-1) and normal rat interleukin-2 (IL-2) production, and (5) venom augmented adjuvant rat mitogen and IL-2 responses. These observations were interpreted as consistent with honey bee venom inhibiting certain macrophage functions, leading to reduced IL-1 production, diminished T cell responses, and less IL-2 elaboration, presumably important events in the pathogenesis of adjuvant induced arthritis. There is now considerable interest in unconventional and nontraditional therapies for arthritis. Based on accumulating evidence, venom therapies merit attention both for possible (adjunctive) clinical value and as a probe to better understand the pathogenesis of inflammatory arthritis. Further observations are awaited with interest.

Richard S. Panush, M.D., Clinical Arthritis Scholar, Professor of Medicine, Div. of Clinical Immunology, Rheumatology and Allergy, Department of Medicine, College of Medicine, University of Florida, and Veterans Administration, Medical Center, Gainesville, FL 32610.

J. Rheumatology 1988, 15:10:1461. Reprinted in BeeWell, April 1993. Much research has been established since this article appeared in 1988. References, omitted to save space, are available from the editor of this newsletter.

UNDERSTANDING PRESCRIPTION DRUGS

Dorothy L. Smith, Pharm D
from the *British Medical Journal*

Beekeepers should think twice before taking some anti-inflammatory drugs. The drugs may reverse their immunity to bee stings.

During the last few years, several new non-steroidal anti-inflammatory drugs have been developed to relieve pain and reduce stiffness, swelling and joint pain associated with inflammation. Such drugs include ibuprofen, fenoprofen, naproxen, ketoprofen, sulindac, piroxicam, suprofen and tolmetin.

Two cases have recently been reported of people with an immunity to bee stings taking a non-steroidal anti-inflammatory drug and suffering serious allergic reactions to bee and wasp stings.

A 66-year-old beekeeper had developed an apparent immunity to bee stings over six years. She was prescribed a non-steroidal anti-inflammatory drug for osteoarthritis. A few months after taking the drug, she was stung on the wrists while working around the bee hives and within 15 minutes developed heart palpitations, a rash and swelling of the mouth and tongue, making it difficult for her to breathe. She

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stopped taking the drug and 48 hours later when she was stung again, she developed no reaction.

Another report describes the 48-year-old wife of a beekeeper who had been taking a non-steroidal anti-inflammatory drug for five months for osteoarthritis. She had previously had only skin reactions to wasp stings but one day developed widespread swelling, red, itchy rash, heart palpitations and shortness of breath within two minutes of being stung by a wasp. Hospitalization was necessary.

Until more is learned about the reason for these reactions, beekeepers should be aware of drugs and bee stings.

Advertising Information

MSBA is published four times per year, with an average mailing of 460 newsletters per issue. Advertising requests should be sent to: Larry Hensley
13520 Old Jamestown Rd.
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Deadlines for Advertising:

<u>Deadline</u>	<u>Publication</u>
February 15	March 1
June 1	June 15
September 1	September 15
December 1	December 15

Advertising Rate:

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Business Card Size	\$7.50
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THE THERMOLOGY OF WINTERING HONEY BEE COLONIES

Thermocouples were established in different planes in a hive of wintering honey bees at Madison, WI, and temperatures were determined. Then the colony was killed with gas. Exact determination of the cluster location in relation to recorded temperatures proved that such temperature records precisely locate the cluster and show where brood is being reared, where bee activity occurs beyond the brood area, and the insulating shell of relatively inactive bees.

From 1,200,000 thermocouple temperature determinations made in bee-hives during the winter, the following information was obtained:

- 1) Temperature readings permit determination of the cluster size, shape, movement, and brood-rearing activities.
- 2) The 44 degree Fahrenheit isotherm establishes the outermost limit of the winter cluster.
- 3) The bee population is densest at the 55 to 56 degree isotherm.
- 4) The temperature between two frames of brood is normally 92 to 97 degrees.
- 5) When brood is on only one side of the thermocouple, the temperature ranges from 85 to 92 degrees, depending on the stage of the brood.
- 6) The unprotected colonies had the tightest insulating shell, or the least distance between the 44 and 60 degree isotherms.
- 7) A colony protected by insulation will have a less compact cluster that will fluctuate more in size with temperature change than a cluster in an unprotected colony.
- 8) The area of the cluster within the 76 degree isotherm is the active or heat-generating area, with a relatively low density of bees.
- 9) Some cluster temperature changes are associated with cluster movement for food or just changes in location.
- 10) In hives heated up to 40 degrees the cluster response is not different from that in insulated hives.
- 11) Insulated colonies start brood rearing a few days earlier than unprotected colonies, but the latter tend to catch up shortly after warmer weather arrives.
- 12) As high as 100 degrees was recorded in some seemingly normal clusters when the outside temperature was relatively uniform and moderate.
- 13) The highest temperature recorded in any cluster was 105 degrees, which occurred in a small unprotected colony when the outside temperature was 8 degrees. Its generally high cluster temperature continued for some unknown reason throughout the season.
- 14) The average cluster shape is usually ellipsoidal; however, temporary unusual shapes were frequently recorded.
- 15) Five colonies survived extremely low mean temperatures in a refrigerator, as follows:

Days	degrees F.
35	-26.8
41	-28.8
74	-3.3
84	-11.5
106	-2.4
- 16) The temperature within the cluster varies, but under normal conditions it is not closely correlated with outside temperatures. However, a pronounced change in the temperature during the day will cause an appreciable change in the cluster size and temperature.

- 17) Honey bees make no attempt to maintain the temperature in the domicile outside the winter cluster.
- 18) A cluster held for long periods under freezing conditions declines in strength. The rate of decline is dependent on pollen stores available, but it is slower in insulated than in unprotected colonies.
- 19) Brood rearing will occur under subzero conditions in insulated colonies with plenty of pollen and honey stores in the cluster.
- 20) Under normal winter conditions either insulated or noninsulated colonies should survive at Madison, WI.

United States Department of Agriculture Tech. Bulletin No. 1429

PESTICIDE DEPENDENCY

From APIS, Fla. Apiculture Extension Newsletter

The dangers of pesticide dependency are legion. They include: product contamination, environmental pollution, and a chemically-resistant pest population. And in a perverse way, chemical control also contributes to long-range problems while admittedly providing a short-range solution. That's because treatment keeps susceptible bee colonies alive, and in the process, prevents detection of stock that has innate resistance to the pest. The message remains clear: DON'T CHEMICALLY TREAT UNLESS THERE IS A REASON!

Does the concept of resistant stock hold up under scrutiny? Take a look at chestnuts as reported in the December, 1992 issue of *Citrus and Vegetable Magazine*. Prior to 1904, the American chestnut was the most important food and timber tree in

Eastern U.S. hardwood forests. But a bark fungus, accidentally introduced from Asia (shades of Varroa, also introduced from there), killed some 3.5 billion trees from Maine to Georgia west to the Mississippi River. This largest botanical disaster in history took only 40 years.

According to the article, a James Carpenter discovered a large living American chestnut in a grove of dying trees in the early 1950's. Budwood from this tree was grafted into rootstock, and in 1962, seedlings were crossed back to both American and Chinese parents. The second generation was moved to Alachua, FL where a grove of some 60 trees can be found that are now over 40 feet tall and 16 inches in diameter. These Dunstan chestnuts are healthy, vigorous and bear every year. There has not been a single reported infection from the fungus on this variety for more than 30 years.

Fortunately for the beekeeping industry, resistant honey bee stock found in Yugoslavia is now being released to selected queen breeders in the U.S. This is stock ARS-Y-C-1, somewhat resistant to Varroa and considered economically so to tracheal mites. At the present time, a U.S. Department of Agriculture/beekeeping industry stock release panel has been formed. It is seeking Breeder-Propagators with a good deal of experience who will ensure that ARS-Y-C-1 is successfully reared and distributed to beekeepers. For more information, contact Dr. Thomas E. Rinderer, Research Leader, Baton Rouge Bee Laboratory, 1157 Ben Hur Rd., Baton Rouge, LA 70820, phone (504)766-6064.

**MISSOURI STATE BEEKEEPERS ASSOCIATION
1993 FALL MEETING OCTOBER 9, 1993
MERAMEC CAVERNS
STANTON, MISSOURI**

**NOTE: WE PLAN TO HAVE THE MEETING ROOM HEATED, BUT I SUGGEST THAT YOU BRING A SWEATER OR LIGHT JACKET JUST IN CASE IT IS NOT WARM ENOUGH FOR YOU.
A.M.**

8:30 - 9:00 REGISTRATION

9:05 - 9:15 INVOCATION & WELCOME

9:15 - 10:00 "LATEST VARROA MITE RESEARCH FROM GEORGIA", BY DR. KEITH DELAPLANE, ASSISTANT PROFESSOR AND EXTENSION ENTOMOLOGIST AT THE UNIVERSITY OF GEORGIA.

10:00 - 10:30 BREAK

10:30 - 11:15 "IMPORTANCE OF BEE POLLINATION", BY DR. JOHN SKINNER, ASSISTANT PROFESSOR OF ENTOMOLOGY AND PLANT PATHOLOGY AT THE UNIVERSITY OF TENNESSEE.

11:15 - 11:45 "LATEST RESEARCH OF SLATTED RACK", BY DR. KEITH DELAPLANE, ASSISTANT PROFESSOR AND EXTENSION ENTOMOLOGIST AT THE UNIVERSITY OF GEORGIA.

11:45 - 12:45 LUNCH (REGISTRATION REQUIRED) THERE ARE NO OTHER RESTAURANTS CLOSE TO MERAMEC CAVERNS, SO YOU SHOULD PLAN TO ATTEND LUNCH AT MERAMEC CAVERNS.

12:30 - 1:15 AUCTION FOR MISSOURI HONEY QUEEN PROGRAM

1:15 - 1:45 "INTEGRATED PEST MANAGEMENT TO CONTROL MITES" BY DR. JOHN SKINNER, ASSISTANT PROFESSOR OF ENTOMOLOGY AND PLANT PATHOLOGY AT THE UNIVERSITY OF TENNESSEE.

1:45 - 2:30 "WAX MOTH BIOLOGY AND CONTROL" BY DR. KEITH DELAPLANE.

2:30 - 3:00 BREAK

3:00 - 3:30 "FUNDAMENTALS OF BEEKEEPING", BY KEITH DELAPLANE.

3:30 - 4:00 BUSINESS SESSION

4:00 - ATTENDANCE PRIZES AND ADJOURNMENT

THERE WILL BE PLENTY OF ACTIVITIES FOR SPOUSES AND CHILDREN DURING THE MEETING. WE WILL RECEIVE A DISCOUNT ON THE CAVERN TOURS. THE RATES ARE \$6 FOR ADULTS AND \$3 FOR CHILDREN (5-11). THERE IS ALSO A NEW SUPER WAL-MART AND BUD'S (A WAL-MART CLOSE OUT WAREHOUSE STORE) IN SULLIVAN. CAMPGROUND RATES ARE \$7 FOR PRIMITIVE (NO HOOKUPS), \$10 WITH ELECTRIC HOOKUPS.

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PLEASE REGISTER EARLY. IT IS IMPORTANT THAT WE HAVE OUR ATTENDANCE COUNT AS EARLY AS POSSIBLE. LUNCH AND MEETING REGISTRATION IS \$10.00. MEETING REGISTRATION ONLY IS \$2.00. PLEASE SUPPORT THE ASSOCIATION BY ATTENDING THE LUNCH, THIS ENABLES US TO GET THE MEETING ROOMS WITHOUT PAYING RENT.

EVERYONE IS INVITED TO ATTEND THE EXECUTIVE BOARD MEETING AT 7:30 P.M. ON FRIDAY, OCTOBER 8, 1993 AT THE MERAMEC CAVERNS.

1993 FALL MEETING REGISTRATION

NAME _____

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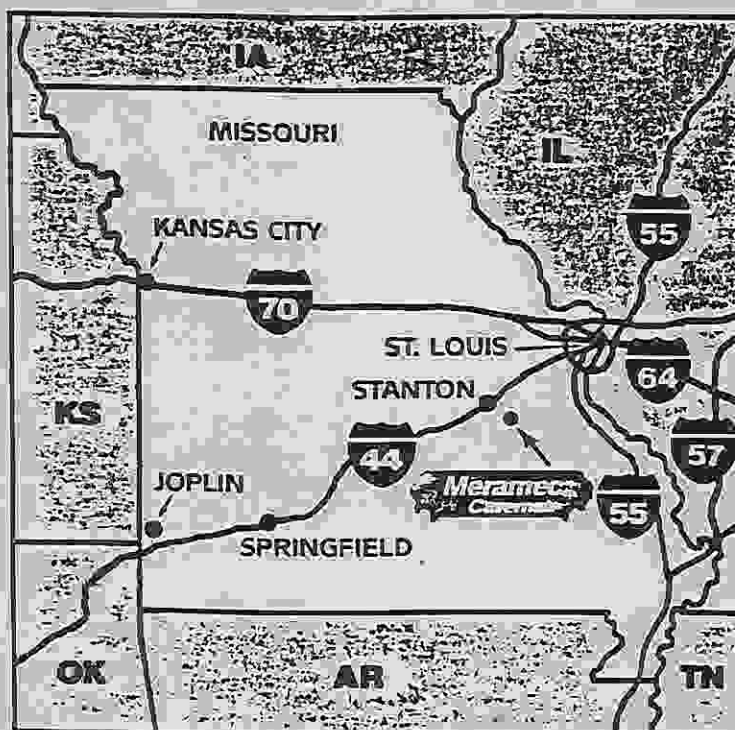
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FLORISSANT, MO 63033 (314) 355-6935



STATE FAIR REPORT: by Sharon Gibbons

Attendance at Missouri State Fair was down about 5% from last year. They blamed it on the steady daytime temperatures of over 90 degrees. The heat was great for ice cream sales, and we did sell out about 4 p.m. Sunday, with many more begging for some. The atmosphere was much different this year, and I blame that on the flood problems this year. Exhibits were down for apiculture although the honey exhibited was some of the best and lightest I've seen. The moisture content was high which may have kept some beekeepers from exhibiting.

Thanks to all who came to help out at the fair. It is our main money raising activity, and even if we didn't make money, the honey promotion has a benefit that increases all of our sales. Every year I seem to forget the name of someone who volunteered their time, so if you worked at the fair, and I missed putting your name in print, please let me know.

We were very short of beekeepers to work the honey booth this year during the week. We always seem to have too many on weekends. I like to give everyone who comes to the fair a chance to visit other exhibits on the fairground during the day, but this year we were so short that there wasn't time to give them. For example, on Thursday, we had only two people besides myself, and I had to leave to do cooking demo's in the Home Ec. building. I thank all of you who answered my desperate calls for help.

We once again used our bee skep that we made last year for the center of attention. Ian Brown will have a photo display at the Fall meeting and any comments would be welcomed. We also added an educational area, which included pictures of Missouri beekeepers at work, an observation hive, a bee tree, etc. Mann Lake Supply donated enough catalogs for us to cut out the large colored bee from their cover to pin onto the hexagons of the inside of the skep. A lot of work, but satisfaction gained from all the positive comments we got from visitors to the building.

We had an unusual problem this year. We discovered that honey was being stolen from our booth, and also from the exhibit area. It is very disturbing to find out that we aren't being provided with adequate security when our booth space cost was increased by 25%. This happened during the night, since we were always the last out of the building (except for the man with the key), and the door was still locked when we arrived in the morning. Any letters of complaint should be directed to Fair Director Roger Alewel, Missouri State Fair, P.O. Box 111, Sedalia, Mo. 65301.

Here is a list of all the volunteers for the 1993 fair.

Bob McCarty	Dan Adams & family	Ron Vivian
Glenn & Joann Davis	Louise Pruitt	Mickey & Gerry Lee
John Birchen	Shirley & Ray Barton	Steve Moeller
Bob & Elizabeth Harrison	Marie & Don Hendrickson	Paul Lammert
Karen, Diane, Jeremy Mann	Ted, Marlene, & Greg Jansen	Mike VanArsdall
Charles Schwartz & family	Ruth & Ervell Hoover	Sharon Gibbons
Helen & Wilbur O'Neill	Clarence Vogeler	Dr. Flernoy Jones
Jim Thaxter	Roger & Sue Nichols	Ian & Pam Brown Ed
& Jeanne Fisher	Norm & Shirley Grosche	John Hartmann
Wayne & Maxine Thomas	Ryan Cooper	Joli Winer
Cecil Sweeney	Julie Batton, Missouri Honey Queen	

One beekeeper I pulled out of the crowd on the first Thursday. I think he was from Midwestern, but he had never worked the fair booth before.

Publicity and interviews were numerous this year for our exhibit. Honey Queen, Julie Batton did several interviews, along with Ted Jansen doing an interview on Monday. Glenn Davis and Karen Mann were interviewed by the Plainsman Weekly News. It appeared as part of the Thursday's State Fair Program book.

On five days of the fair we presented cooking classes in the home ec. building. Thanks to Helen O'Neill, Karen and Diane Mann, and Joann Davis for helping me. Julie Batton, Missouri Honey Queen, was present for three days of the fair. We arranged for her to do some publicity for our industry. She was presented to Fair-goers in the Mo.-Ag theater during the talent show competition for Mo. State Fair Queen. She had no advance preparation, but presented herself well. Jim from Kres Radio in Moberly, Mo interviewed Julie, and told me that he was very impressed with her knowledge of our industry, and her composure during the interview. Julie was interviewed by several other radio stations, and also did a cooking demo at our honey booth. We thank Julie for the time she spent on our behalf.

There were 45 individual entries in the honey competition. Total money rewarded was \$341. \$364 in prize money was returned to the fair. There were no beekeepers who entered every class this year. There were no bulk comb honey entries at all, and only one store display. The individual Grand Champion was awarded to Sharon Gibbons.

There were 29 entries in the group competition, with most of them coming from Midwestern Beekeepers' Assn. Also represented were entries from Eastern Mo. Beekeepers, Mo. Valley Beekeepers, And Two Rivers Beekeepers Assn. The money awarded was \$221 and \$161 was returned to the fair. The group Grand Champion was Midwestern Beekeepers'. Will any of you local associations take this title away from them? This is a challenge for next year. Midwestern is very well organized holding a picnic prior to the fair where they compete locally, and then they bring the winning entries to the fair.

There were 28 entries in the Honey Cookery Competition. The Grand Champion was awarded to Paula Hampton from Windsor, Mo.

The following were the prizes awarded in State Fair Honey Competition:

Class 2: Karen Mann- 1st

Class 3: Sharon Gibbons- 1st

Micky Lee -2nd

Vernon Renolds -3rd

Karen Mann -4th

Glenn Davis -5th

Class 4: Sharon Gibbons -1st

Class 5: Sharon Gibbons -1st

Class 8: Glenn Davis -1st

Micky Lee 2nd

Sharon Gibbons -3rd

Vernon Reynolds -4th

Ed Fisher-5th

Jann Amos -6th

Norman Grosche -7th

Ron Vivian -8th

Class 9: Ian Brown -1st

Vernon Renolds -2nd

Class 15: Sharon Gibbons -1st

Glenn Davis -2nd

Class 16: Ian Brown -1st

Glenn Davis -2nd

Class 17: Mid-Western-Glenn Davis

Class 18: Ron Vivian- 1st (MW)

Micky Lee -2nd (Two R.)

Sharon Gibbons (Eastern)

Glenn Davis (MW)

Class 19: Glenn Davis 1st (MW)

Sharon Gibbons (Eastern)

Class 20: Ed Fisher (MW)

Class 21: Glenn Davis (MW)

Class 22: Paul Garrett (MW)

Ed Fisher (MW)

Ken Lawrence (MW)

Sharon Gibbons (Eastern)

Glenn Davis (MW)

Sharon Gibbons -3rd
 Glenn Davis -4th
 Ed Fisher -5th
 Joseph Voltz -6th
 Class 10: John Steffens -1st
 Glenn Davis -2nd
 Class 11: Glenn Davis -1st
 State Fair Results:
 Class 11: John Steffans -2nd
 Class 12: Ron Vivian -1st
 Sharon Gibbons -2nd
 Glenn Davis -3rd
 Ian Brown -4th
 Class 13: Sharon Gibbons -1st
 Glenn Davis -2nd
 Class 14: Glenn Davis -1st
 Sharon Gibbons -2nd

Class 28: Paula Hampton
 Sarah Patterson
 Mrs. Ed Walters
 Class 30: Paula Hampton
 Mrs. Ed Walters
 Class 32: Mrs. Ed Walters
 Sarah Patterson
 Paula Hampton
 Celeste Henry

John Percival (MW)
 John Steffens (MW)
 E. Sanford (MW)
 Class 23: Ian Brown -(Mo. Valley)
 Richard Scott (MW)
 Glenn Davis (MW)
 Ed Fisher(MW)

Class 24: Glenn Davis -(MW)
 John Steffans (MW)
 Class 25: Paula Hampton-baking
 Mrs. Ed Walters
 Class 26: Hazel Rooks
 Mrs. Ed Walters
 Paula Hampton
 Class 27: Sarah Patterson
 Paula Hampton
 Maxine Griggs
 Mrs. Ed Walters
 Class 29: Mrs. Ed Walters
 Sarah Patterson
 Paula Hampton
 Maxine Griggs
 Class 31: Sarah Patterson
 Alice Dawson
 Paula Hampton
 Mrs. Ed Walters

SEPTEMBER PROCLAIMED MISSOURI HONEY MONTH

Missouri Honey Queen Julie Batton accepts proclamation from Governor Carnahan on August 24th. She presented him with a basket of honey products. Beekeeper John Hartmann represented Missouri State Beekeepers at the signing.



MISSOURI LOCAL BEEKEEPING ASSOCIATIONS

MIDWESTERN BEEKEEPERS ASSN: K.C. area. Pres. Ron Vivian RR 1 Box 35A, Bates City, MO 64011; Secretary, Carol Kjelskus, 7121 Park, K.C. MO 64129. Meets monthly.

BOONE REGIONAL BEEKEEPERS ASSN: Columbia area. Pres. Joe Yungwirth, 8909 Boatman Hill Rd., Columbia, MO 65202; Secretary, Helen Vroman, RR 1 Box 15B, Armstrong, MO 65230. Meets quarterly.

TWO RIVERS BEEKEEPERS ASSN: St. Charles area. Pres. Micky Lee, 9637 Ridge Ave., Overland, MO 63114; Secy/Treas. Gerry Lee, 9637 Ridge Ave, Overland, MO 63114. Meets monthly.

EASTERN MISSOURI BEEKEEPERS ASSN: St. Louis area. Pres. Bob Finck, 8867 Hemingway, St. Louis, MO 63126; Secretary Ken Corbin, 1776 Golden Lake Ct. Chesterfield, MO 63017. Meets monthly.

JEFFERSON COUNTY BEEKEEPERS ASSN: Hillsboro area. Secretary Marko Biscan, 7255 Hwy. 30, Cedar Hill, MO 63016.

MID-MISSOURI BEEKEEPERS ASSN: Rolla area. Pres. Luther Blair, RR 5 Box 154, Salem, MO 65560; Secretary Susan Givens, 107 West Dent Ave., Salem, MO 65560.

DALLAS COUNTY BEEKEEPERS ASSN: Buffalo area. Secretary Inge Foster, RR 1 Box 105, Urbana, MO 65767.

OZARK BEEKEEPERS ASSN: Springfield area. Pres. Charles Wills, 630 S. Newton, Springfield, MO 65806; Secretary Mary Jane Kelly, RR 6 Box 601-I, Springfield, MO 65803.

OZARK MOUNTAIN BEEKEEPERS ASSN: Branson area. Pres. Byron David, RR 2 Box 23, Kisse Mills, MO 65680; Secretary Eddie Rosencrans, RR 2 Box 118, Reeds Spring, MO 65737.

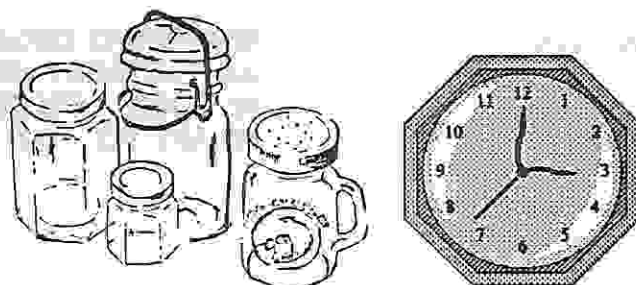
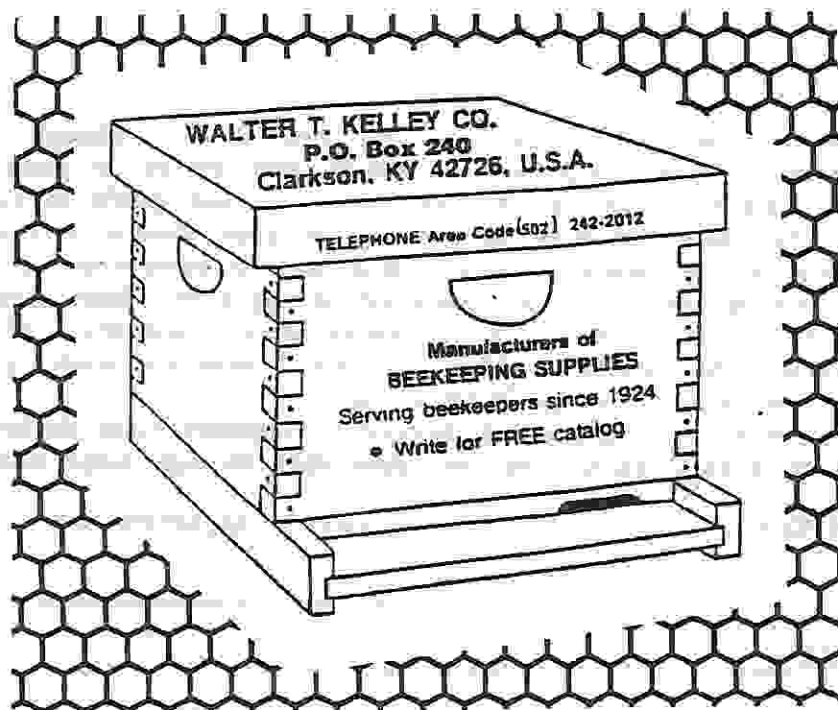
MISSOURI VALLEY BEEKEEPERS ASSN: Washington area. Pres. Bill Kohne, RR 2, Box 43, Sullivan, MO 63080; Secretary Gorden Davis, 2151 Golfview, Wentzville, MO 63385.

SEMO HONEY PRODUCERS ASSN: Poplar Bluff area. Secretary Bob Carter, 407 LeSeiur, Portageville, MO 63873.

BUSHWACKER BEEKEEPERS ASSN: Nevada area. Treasurer H. George Reeves, RR 4 Box 226A, El Dorado Springs, MO 64744.

SOUTH CENTRAL BEEKEEPERS ASSN: West Plains area. Pres. Pamela Wright, RR 1 Box 777, West Plains, MO 65775; Secretary Marge Kilton, RR 2 box 2746, Alton, MO 65606.

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TO MEMBERS:

We are interested in each and everyone of our members. Although we cannot give each one the individual attention we would like; we try to make your membership meaningful and trust that it adds zest, pleasure and profit to your beekeeping endeavor. You may not even have bees, but your interest in bees and what the bees contribute to our nations economy will lead to prosperity for all.

If you have a few minutes, I would appreciate having a few lines from you, and you may be sure that it will make the job of editor more pleasurable. If you know of any beekeeper who does not belong to Missouri State Beekeepers Assn., please pass this newsletter on to them and encourage them to join.

Dues are \$5.00 per year. Make check payable to Missouri State Beekeepers Assn. If you belong to a local association, pay your dues through local treasurer.

ENCLOSED IS \$_____ for _____ YEARS OF MEMBERSHIP.

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