GLEANINGS IN JULY '86

BEE CULTURE

HONEY PACKING MADE EASY!

DADANT HONEY BOTTLER: Honey compartment is surrounded by water on side walls and bottom; 300 lb. honey capacity; bottom drain. Both inner and outer tanks are all-welded, satin-finish stainless steel tanks with welded stainless fittings. Stainless hopper supports a 60# container or allows direct filling. Unit comes with 1" ball-type bottling valve, 1800 watt 120v. immersion heater, water levels sight glass, 1½" water inlet, 1" water drain, and honey straining bag. Picture shows bottler equipped with optional equipment which is sold separately (see below). wt. 65 lbs.

M00618 Dadant Honey Bottler **$566.60**

OPTIONAL LONG-STEMMED THERMOMETER: Monitor honey temperature at the honey outlet with a quality 24" stem unit that reaches to the honey drain. Will not interfere with stirring & blending system. wt. 3 lbs.

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OPTIONAL STIRRING & BLENDING UNIT: A complete electric motor powered paddle system to stir your honey. Promotes uniform honey heating, speeds the process and assists blending of various flavors. Manually operated electronic speed control provides variable speed range. Stainless shaft and paddles. Can be installed without disassembling bottler. wt. 21 lbs.

M00620 Optional Stirring & Blending Unit **$257.60**

M00621 Extra Strainer Bag, wt. 8 oz. each, ... **$8.32**

THE HONEY PANTRY: Sucessfully market honey and other liquids in the bulk. Develop your marketing display with one or all of the Honey Pantry components. Ideal for self-service operations.

Display Unit: Gleaming stainless steel; Supports 2 pantry tanks. Two units hook together to support 5 tanks. wt. 98 lbs.

M00460 ..... **$361.68**

7½ Gal. Tank: Bottom drain. Cover included. Optional Heater may be used. Dispensing valve sold separately. wt. 17 lbs. (See left tank).

M00456 ..... **$104.12**

Optional 125 watt Heater: 110 volt heater adheres to 7½ gal. tank bottom. Preset for approximately 100°F. product temperature. wt. 1 lb.

M00459 ..... **$55.00**

10½ Gal. Tank: Side drain. Cover included. Dispensing valve sold separately. wt. 16 lbs. (See right tank)

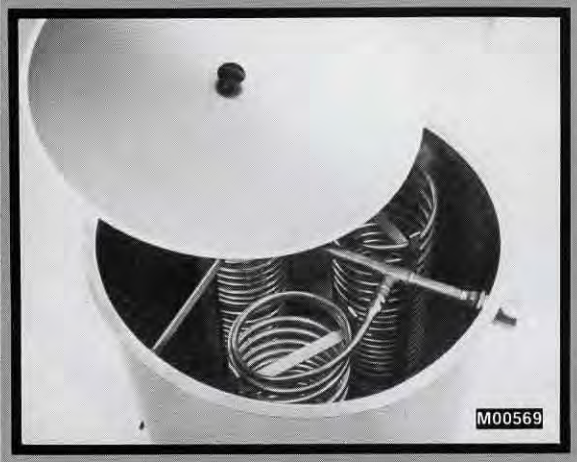
M00455 ..... **$86.84**

3/4" Dispensing Valve: with fitting for "thin" liquids. wt. 1 lb.

M00457 ..... **$20.00**

1¼" Dispensing Valve; for "thick" liquids such as honey. wt. 2 lbs.

M00458 ..... **$59.80**



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M00569 ..... **$578.70**

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Gleanings In BEE CULTURE

Since 1873

July 1986 (ISSN 0017-114X) Vol. 114, No. 7

Created To Help Beekeepers Succeed

113 Years Continuous Publication by the Same Organization

CONTENTS

COVER . . . This coin is from the island of Tonga, off the Eastern Coast of Australia. Primarily an agrarian culture, the Tonganese have placed a tangible value on Bees and Beekeeping.

INSIDE IN JULY

There's a lot going on outside this month, if Mother Nature and the bees cooperate, but don't forget to look inside because the July issue is packed wall to wall with good reading.

We have two excellent feature articles this month. The first, "Burning BeeHives Infected With Foulbrood" looks at some techniques to make this job safer, easier and better. Many states still require this sort of treatment so know the facts and read the techniques. What one state did about it's pesticide problem is summed up in our second feature. There are many roads to explore when approaching this problem from the state level and they are explained well here. On an individual basis, Steve Taber and Elbert Jaycox, among others, explore some of the problems and some of the remedies in their articles.

George Coombes relates a tale of what happens when you don't take those extra precautions regarding used equipment and disease. Steve Burt in his 'Gentle Way' offers one of the best articles we've seen in a long time for beginners, especially in an urban setting.

If equipment is on your mind, Roger Morse has some further advice on excluders and Charles Koover offers his opinion on plastic foundation — both good for beginners or professionals.

You might want to look at the new Monthly Honey Report to see how you stack up in both your area and nationally. Some real differences are showing up you should be aware of.

We have all the regulars here this month, covering a variety of subjects in their unique styles — some of the best reading available.

And as usual, there are some surprises tucked away here and there that should keep you interested and keep you busy inside — in July. COMING IN AUGUST: Teaching School Kids About Bees, Beekeeping and Beekeepers will be highlighted in August, just in time to prepare for the school year. Several articles outlining preparation, techniques and available materials are on tap for you to use when heading 'back to school'.

We're also going to look at fall honey plants and some more plans for landscaping for home and hive. Charles Koover has another piece coming — this time looking at frames and their construction.

These, plus a variety of stories and of course the best from our regulars — Next Month in Gleanings.□

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City State Zip

NEW ADDRESS: Street

City State Zip

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NAME

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City State Zip

Circle Appropriate Months: J F M A M J J A S O N D

ADDRESS NO. 2: Street

City State Zip

Circle Appropriate Months: J F M A M J J A S O N D

Send Form To: Subscription Department, P.O. Box 706, Medina, Ohio 44258

THE INNER COVER

My wife is the real beekeeper at our house. She has the time and energy to do the work involved and is a classic sufferer of 'bee fever'. This doesn't mean that I'm not out there when she needs a hand, or that I'm immune to the wiles of those little ladies. It's just a matter of so many hours in a day. That, and the fact that I become very frustrated when I can't do something as well as I'd like. I'm not a perfectionist, but I come close. I think fussy is a better word.

But back to why I started all this. I recently began wondering how many active female beekeepers there are. I read about a few once in awhile in the journals and after perusing our latest Who's Who I find there are 30 association secretaries listed who aren't men. This is approximately 50%. However, there is only 1 female listed under the Professor in Charge of Beekeeping Courses. There are 3 others listed by their first initial so I'm not sure there. Nevertheless, at most, it's only 4 of the 47 listed. That's only 8.5%.

As far as Extension Personnel are concerned, I found 2 listed and the same number of inspectors. I'm beginning to think something is amiss. Under Government Agencies and Industry Organizations there are exactly 9 women listed in positions of authority — make that 12 counting the Ladies Auxillary of ABF.

So, of the 218 people listed under Extension, Inspectors and Industry Organizations, only 20 seem to be women. That's 20 out of 218 — only 9.2%. If you add to these the women in State Associations you come up with a grand total of 50 women. 50 out of 268 — roughly 20%. Is this right? Are only 2 out of every 10 beekeepers women? I suspect not, but I don't have any data to back me up.

This leads me to think that one of two things can be happening. First, there really are far fewer women keeping bees than men. Eighty percent fewer. I don't think this is right because I see a more equal mix at the local level when attending meetings. Not exactly equal but closer than 80-20. On the other hand, beekeeping is physical labor. A lot of lifting and moving is involved and it's usually not a very clean job. This may account for some of the difference but when I work with Diana, I only do half the work — not 80%.

Another idea comes to mind that I think carries more weight. There is the old adage, "Behind every good man is a better woman". This involves a whole lot of things in this business. Like who

captures the swarms during swarming season; who works in the honey house (i.e. kitchen, basement, garage) during harvest; and who makes sure dues are paid, meetings attended and subscriptions renewed. I know this isn't an 80-20 split. Right?

So how come the discrepency in the list I mentioned? Well, there are generally fewer women in professional organizations than men — in almost every occupation you look at (one obvious exception here is the Honey Queen program). When I was a graduate student there was about a 70-30 split, so I guess that explains the end product — but not the reason.

However, this doesn't explain why there are only 11 women listed in the Industry Organizations. I don't think possessing an advanced degree is a prerequisite for these groups. There must be a common root here somewhere.

Maybe women in this business just don't have the time to go to meetings and such, or they don't want to get involved in the politics of beekeeping. Or, and I think this is probably the reason in many cases, most women work bees because they enjoy working bees — not for the glory and hardship of holding office.

Actually, I would guess its some combination of all these factors, as is the case with most men. But I think that's too bad. A lot of good talent and energy isn't being tapped. This industry can't afford to exclude anyone who wants to help.

•

One of the true joys of this job is that I get to meet a lot of interesting people. Hobbiest, sideline and professional beekeepers are certainly one group that I come in contact with. I probably talk to more beekeepers on the phone than I actually get to meet in person though. This is definitely a drawback, but I get the chance to meet enough of you that I don't feel out of touch.

Another group I meet with some regularity are the folks who write for this magazine. Not only the regulars, although I have yet to meet a few of these, but also those who contribute on a less than routine basis.

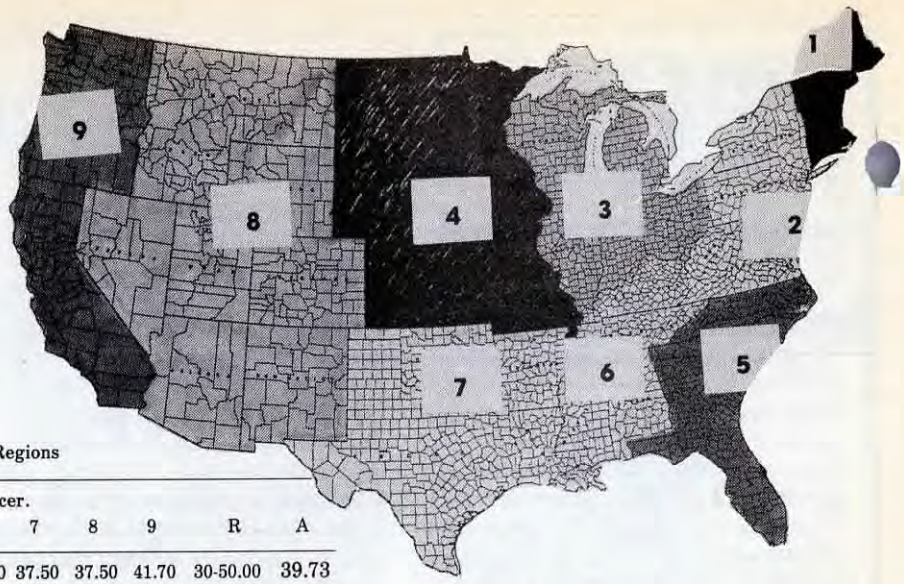
One of the regulars I recently met with was Richard Taylor, Dr. of

Continued on Page 367

Monthly Honey Report

July 1, 1986

The following figures represent current prices reported by our contributors. They are based on reports from many states averaged out for each region. Where insufficient information is received no price is shown. The retail prices represent the price of each size jar.



Wholesale Extracted — Reporting Regions

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer.

Containers Exchanged	1	2	3	4	5	6	7	8	9	R	A
60 lbs. (per can) White	42.00	36.67	49.00	--	35.00	40.00	37.50	37.50	41.70	30-50.00	39.73
60 lbs. (per can) Amber	42.00	33.33	42.00	34.40	30.00	36.20	33.33	36.23	40.00	24-42.00	35.59
55 gal. drum/lb. White	--	.50	.48	.46	.50	--	.59	.59	.58	.46-.62	.55
55 gal. drum/lb. Amber	--	.46	.42	.59	.43	.45	.53	.55	.54	.40-.59	.50
Case lots — Wholesale											
1 lb. jar (case of 24)	30.50	25.00	25.16	23.76	31.33	24.40	27.08	25.17	30.12	21.60-38.40	26.86
2 lb. jar (case of 12)	31.00	27.35	22.95	22.56	34.80	23.00	26.25	33.15	29.40	21-44.25	27.61
5 lb. jar (case of 6)	32.00	25.60	24.50	24.72	--	24.00	26.25	25.13	28.20	23.04-34.	26.23
Retail Honey Prices											
½ lb.	1.00	--	.75	.81	.75	.84	.82	.87	1.08	.65-1.29	.88
12 oz. Squeeze Bottle	1.50	1.18	1.27	1.03	1.38	1.28	1.29	1.21	1.41	.89-1.59	1.29
1 lb.	1.63	1.52	1.37	1.17	1.67	1.43	1.56	1.62	1.65	.90-1.85	1.52
2 lb.	2.70	2.55	1.88	2.44	3.17	2.25	2.95	2.79	3.04	1.50-3.55	2.73
2½ lb.	3.55	3.05	3.97	2.59	4.60	3.19	3.05	3.51	3.78	2.55-4.60	3.40
3 lb.	4.00	4.04	3.37	3.29	4.98	3.68	3.90	3.75	3.89	3.29-4.98	3.85
4 lb.	5.00	4.95	5.07	4.59	--	4.58	4.60	4.73	--	4.19-5.89	4.75
5 lb.	6.50	6.50	5.70	5.25	6.45	5.78	5.25	5.59	5.54	5.-7.00	5.76
1 lb. Creamed	--	1.75	1.50	1.49	1.95	1.49	1.56	1.54	1.50	1.35-1.75	1.56
1 lb. Comb	2.25	1.63	2.59	--	--	1.67	2.00	1.88	2.07	1.-3.00	2.04
Round Plastic Comb	1.75	1.75	1.48	--	1.57	2.00	1.60	1.72	1.65	1.10-2.00	1.66
Beeswax (Light)	1.25	1.78	1.97	1.00	1.10	1.01	1.03	1.17	1.13	.95-3.00	1.23
Beeswax (Dark)	1.15	1.35	.90	.90	1.00	.87	.95	1.08	1.10	.85-2.00	1.05
Pollination (Avg/Colony)	23.75	22.50	28.75	10.00	22.50	--	27.90	21.00	23.75	10.00-27.90	22.60

New Features on Honey Report Graph

On the far right hand side you will see two new columns. The first, labled "R" is the range of prices reported from all contributors — lowest to highest. This will give you an idea where you stand nationally. The second column, labeled "A" is the average price of a particular commodity across all regions. Example: the range in price of a 1 pound jar of honey sold retail is $.90 — $1.85 and the average price across the country is $1.52.

In the comments section you will see a figure called the "Price Index". This figure is only a descriptive statistic that compares all regions to the highest region of the month.

Example: Region 1 has a price index of 1 this month and remaining regions are compared to that index.

Note: These figures are only as good as the data sent in by our reporters. If you believe the numbers here are not indicitive of your area please contact the editor—we can use your imput.

Region 1

Price index rating of 1.00. Market fair. Good early flow, swarming increased over recent years. Moisture fair to exceptional.

Region 2

Price index rating of .76. Prices fair to moderate. Weather excellent, strong build-up and above average swarming reported. Honey production heavy to date.

Region 3

Price index rating .90. Prices steady to increasing. Generally excellent conditions for build-up and honey production. Some isolated areas slow. Swarming high.

Region 4

Price index .67. Market slow, prices depressed. Cool, wet weather in many areas retarded early flow and build-up, but adequate mositure may help for rest of season.

Region 5

Price index .72. Prices steady to low. Sales slow. Customers waiting for new crop. Area generally dry, early flow spotty. Swarming high in areas, but some feeding required in other parts due to weather.

Region 6

Price index .75. Prices unchanged to low. Early drought slowed some flows but recent rain has helped later crops. Tulip Poplar flow excellent in all states.

Region 7

Price index .74. Prices steady or increasing slightly. Extremely variable weather throughout region makes generalizations difficult. Dry in some areas, wet in others. Generally Eastern areas dry.

Region 8

Price index .79. Prices steady. Early flows appear adequate to good, while build-up is fast. Soil moisture adequate in most areas.

Region 9

Price index .71. Prices steady. Season early, strong build-up but little swarming.

Gleanings Mailbox

We supply the following for your information.

A NOTICE TO OUR READERS About Mail-Order Purchases

1. ***Never send cash.*** Always use a check, money order or credit card.
2. ***Keep a copy of all transactions*** especially cancelled checks, money order receipts and correspondence. For phone orders make a note of the order including merchandise ordered, price, seller's name, address and telephone number, salesperson's name, order date and expected delivery date.
3. ***Understand the seller's return and refund policy*** including the allowable return period and who pays the postage for returned merchandise.
4. ***If you should have a problem with your order or merchandise, write a letter to the seller*** with all of the pertinent information. Telephone complaints should be followed up with a letter of confirmation. Keep copies of all correspondence.
5. ***If you have thoroughly followed up in writing*** with the seller on your problem and still are not satisfied, contact the consumer protection agency in the seller's state or your local U.S. Postal Service.

Dear Editor:

About a year ago, comments by both Mr. Charles Mraz and Dr. James Tew had to do with reinventing the wheel; or redesigning it. Mr. Mraz commented that anyone contemplating new equipment design might do well to study the history of beekeeping. The same holds true for operations.

There is nothing wrong with trying to improve equipment or operations. I spent thirty-eight years in broadcast engineering doing just that. Sometimes the original researcher/designer/builder has overlooked a seemingly unimportant key which the new laborer in the field spots right away. However, the new researcher, by doing some paperwork (reading) first, taking careful note of what has already been done, can probably lighten his chores. No need to rerun every experiment anew.

About a year ago there was a spate of comments in the journals about using puffballs. I offered no comment at the time, thinking someone else might. They didn't.

Now, in the May GLEANINGS, page 212, Mr. Jack Mager writes about using a sugar-water spray for quieting bees, rather than a smoker.

That's right, you guessed it! Both these ideas are old, well over a century old, by none other than Mr. L. L. Langstroth, in his book ***On The Hive And The Honeybee***, published in 1853. Although the Rev. Mr. Langstroth tells of the use of sugar water when entering the hive he does not specifically mention the use of peppermint for the purpose. He does, however, write (page 191) of using peppermint in uniting colonies. The scent of peppermint drew their attention to the sugar water which he sprinkled over the bees. (They didn't have plastic sprayer bottles in those days.) And two and two.

Mr. Langstroth also wrote of how to use musk to foil robbers (bees, that is) and bring this nefarious activity to a speedy close.

An extremely perceptive man, Mr. Langstroth.

Of course, if everyone did their homework the journals would have no new ideas, or at best very few. Each article expands (builds) on previous work, offering more details. We keep reinventing the wheel, or rather redesigning it. Of such is progress.

L. Edwin Rybak
P.O. Box 753, Crystal Drive
Morrisville, VT 05661

Dear Editor:

Anyone interested in corrections (those worth noting) for the June-October 1985 series on wintering can request a copy.

Toge S. K. Johnson
R.D. 1, Box 256A
East Berne, NY 12059

Dear Editor:

Early in May we installed two packages of bees into two empty hives destroyed last year by the wax moth. This year we sprayed our frames thoroughly with Certan before putting them into place.

A day after we installed the two colonies, one moved in with the other, drifting as it is called. While I thought about it, one of the packages left the hive and swarmed into a young pine tree, about 15 feet above the road level. Our ladder only goes to about 8 feet so I borrowed a 30 foot extension ladder from a fellow beekeeper. The thought of perching on that ladder while trying to get the bees down was a little bothersome.

Mulling over the matter, I decided to try to get the swarm into an empty hive by luring them in. First, I took an extension pole pruner and tried to saw the limb on which the bees were, but all it did was shake a number loose onto a bedspread I had placed on the ground below. I grabbed those bees and placed them into the hive I wanted them to be in. Then I sprinkled some feeding sugar water at the entrance to the hive, and we left.

Continued on Next Page

MAILBOX . . . Continued from Page 325

Two hours later when we returned, the swarming colony had moved back into the hive which I had moved some distance from the shade house it had been in before.

Whether this method would work more than once, I don't know. And hope I won't have to try again. But work it did.

Arnold Krochmal

Dear Editor:

Those of us in honey producing areas of this country are quite fortunate that some of the more conscientious breeders of queens place gentleness of bees high within the criteria of their queen breeding program. Naturally, there are other genetic factors that must be considered. Getting all these things together and keeping good stock is quite a challenge to say the least. We are all looking for queens of good size, good performance and bees from her that are quiet on the combs and not over aggressive.

The year that a new, young queen is introduced to a colony, there is likely to be a slight change in the behavior of the bees toward further gentleness. The following year the same colony with the same queen may be examined and found to be average and not too difficult to handle. Half the bees from such a colony, if removed and placed in another hive or divided from the original brood area and a new queen introduced, takes on an even more gentle nature. Strangely enough this all takes place within a short time after introduction of the new queen so the change does not come about because of the hatching bees from eggs laid by the recently introduced queen.

We have observed such situations for a number of years. Why this happens may be difficult to explain if in fact there is an explanation. I will look forward to ideas on this coming from those involved in research. My version of this is that it is because of the change in queen substance possibly in quality as well as in quantity.

Combs of bees can be handled quite rapidly if handled properly without disturbing the bees to any extent. Using the proper amount of smoke at the proper time is a challange for the beekeeper. Handling all colonies in the same manner and with close observations you will be likely to also detect the difference in the recently requeened colonies.

It has been proven by Dr. Elbert Jaycox of the University of New Mexico, and others, that colonies headed by young queens are much less likely to cast a swarm. Young queens lay more eggs daily which in turn produces more populous colonies and in turn produces more honey. A reduction in swarm tendencies is of extreme importance to beekeepers who produce extremely populous colonies in order to produce maximum honey crops. Colonies are not likely to supersede their queen the first year but may the second year and a considerable number will be superseded during the third year. We expect more of queens today than we did 40 or 50 years ago and we have shortened their months or years as effective egg layers for the colonies. Well mated queens may do a good job through the second year but there is no guarantee how well they may do if in fact they maintain good colony strength throughout the year.

A good queen is only one of the criterion for building good colonies BUT without a good queen no good colony can be formed.

Glen L. Stanley
State Apiarist
Iowa Dept. of Agriculture
Wallace Building
Des Moines, Iowa 50319

Dear Editor:

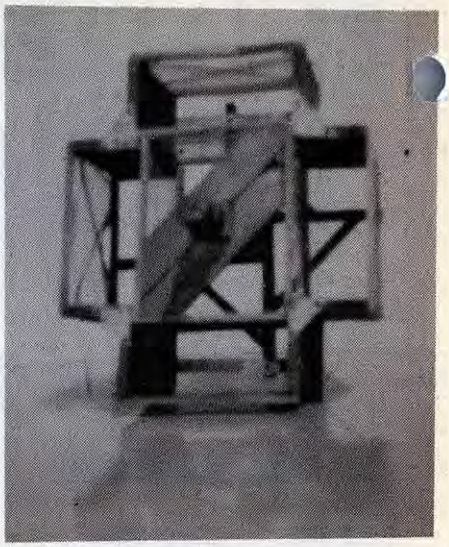
Recycling Patio Candles

Rather than throwing these candles away when they are finished, add a new wick (available from any bee supply company) and beeswax. A fragrance or mosquito repellent can be added at the same time to make these even more appealing.

This idea can be used for another means of marketing all the wax you have available. With a little care they make fine gifts or are fine for use around the house.

Gary Jolly
16037 Lauren Drive
Taylor, MI 48150

Dear Editor:



I seem to have part of an antiquated comb section extractor. If anyone knows time of manufacture, company name and picture or other parts, I would appreciate knowing the facts.

R. B. Goolsby
R 2, Box 236
Harrisonburg, PA 22801

Dear Editor:

On Thursday, May 8th, the U.S. House of Representatives Budget Committee threw a scare over the entire beekeeping industry by adopting an amendment offered by Rep. Hank Brown (CO) to ***eliminate funding for the Honey Price Support Program from the 1987 budget***! Describing the program as "indefensible", Rep. Brown commented that only 200 or so beekeepers were benefiting from this $100 million program and by a large majority the committee voted to eliminate all funding.

Congressman de la Garza, (TX), Chm. of the House Agriculture Committee was told of the Budget Committees action and immediately contacted Larry Meyers, the Washington lobbyist whom the American Beekeeping Federation has retained from time to time. Fortunately, Meyers was able to persuade Reps. Vic Fazio (CA) and Pat Williams (MT) to introduce an amendment to restore the honey price support funds if the committee chairman would allow this item to be re-considered. After the Committee Chairman Wm. Gray, II.

Continued on Page 329

MAILBOX . . . Continued from Page 326

(PA) agreed, and the committee recessed for a dinner break. Meyers, using the data and information we were able to provide, hurriedly drafted an ammendment and support statement for Reps. Fazio and Williams to use.

As a result of these actions, plus getting a number of telephone calls from "people back home", the Budget Committee reversed it's previous action and restored funding for the program by a vote of 17 to 10!

This incident not only emphasizes how important it is that we stay informed and ready to respond anytime Congress is in session but it also emphasizes how important it is to have a representative *on the scene* who can respond immediately!

There have also been some good developments in Washington recently which may be helpful in the future. Rep. Dorgan (ND) included a request for a study of the impact of imported honey on the domestic industry in a trade bill being considered by the House Ways and Means Committee. Also, again with the help of the A.B.F.'s consultant Larry Meyers, Rep. de la Garza, Chm. of the House Ag. Committee, added section 303, "Study Relating to Honey", to a trade bill being drafted by the Ag. Committee. Co-sponsored by Representatives Coelho (CA), Stenholm (TX) and Daschle (SD), this section reads as follows:

> "(a) Study - The Secretary of Agriculture shall conduct a study to determine the impact of imported honey on the domestic U.S. honey producer, the availability of honey bee pollination within the U.S. and whether imports of honey tend to interfere with or render ineffective the Honey Price Support Program of the U.S. Department of Agriculture."

Frank Robinson
Secretary/Treasurer
American Beekeeping Federation

Dear Editor:

Africanized Honeybees
In The United States

The U.S. Department of Agriculture maintains stock of honey bees for programs to improve honey production, pollination, and other characteristics advantageous in bee management. When I was employed by the USDA Agricultural Research Service (Madison Station) in 1963 and 1964, we acquired from the USDA Baton Rouge Laboratory F_1 African queens which had been produced by artificial insemination using semen imported from Brazil Africanized bees in 1960. It was believed that the addition of African genes in the breeding scheme would incorporate characters for vigorous flight both earlier and later in the day, as well as during inclement weather.

The F_1 lines were prolific layers and maintained strong colonies (six deep hive bodies), but unfortunately they were also very defensive. Towards the end of the season, the African stock lines at the Madison Laboratory were destroyed. The negative traits (difficulty of working the colonies) outweighed any positive traits they might have contributed. In 1964 the USDA Administration sent a team to Baton Rouge to destroy all the colonies that could be located. Some were missed as the person in charge of maintaining the stock was on vacation.

During the ensuing years, many queens and drones escaped into the general population, and several queen breeders had acquired the genetic stock for their own breeding programs. It was the USDA policy to release specified stocks upon request. Beekeepers receiving 1st, 2nd, and 3rd generation African queens from queen breeders reported the following problems:

1) Under conditions of stress, the colonies were more apt to abscond rather than remain in the hive to die.

2) Lack of information that the African bees need more attentive management resulted in excessive swarming.

3) Since flight in Africans is regulated by light intensity, irrespective of ambient temperature, the bees flew when they became chilled and were unable to return to the hive. The resulting losses were similar to the enigmatic "disappearing disease".

4) Problems with chalkbrood significantly increased with Africanized bees.

Conclusions: African stocks are less suited to North American conditions. The crosses with African lines did not result in a take over of European bees due to dilution of the genes in the population. Since few persons knew about the presence of African bees, there was no panic by the public nor were there any incidents of deaths caused by stinging. In the opinion of the author, this brief documentation of the prior experience with African bees in the United States can serve as a useful antidote to the alarmist attention by media to the recent African discovery in California, and the anticipated crossing at the Mexican border in 1989.

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The California African Bee
Find in 1985

The actual reality of where and how the original highly Africanized underground swarm in the Lost Hills area came from is as follows:

Since the first African honey bee sperm was imported from South America in 1960 by the USDA, many uses were made of this genetic pool that was over 90% pure AHB. One use was a successful commercial genetic nationwide supplier of queen stock studied and produced a stock line of 70% pure AHB from USDA sources which was shown to be superior as an alfalfa pollinator. This stock line was used extensively in the alfalfa seed producing area around the Southern San Joaquin Valley in California. Thousands of colonies were requeened with this 70% pure AHB stock line for alfalfa pollination. After a period of time, due to the extreme defensive behavior and the minor increase in pollination of this stock, most beekeepers quit using it and subsequently the project failed. From this huge release of AHB stock through many generations of swarming and back crossing resulted in a ferrel colony established years ago and being found and identified by California officials as possibly AHB then destroyed in 1985. Some people have the idea that a truckload of oil drilling equipment could have been the source of unintentional importation of AHB over those long days and miles from South America. To have the swarm establish itself in the Lost

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Book Review

By LARRY CONNOR

A Scanning Electron Microscope Atlas of the Honey Bee

by Eric H. Erickson, Jr., Stanley D. Carlson, and Martin B. Garment
The Iowa State University Press, Ames, Iowa 50010

In assembling this work, the authors sought two goals. First, they wanted to supplement the works of Snodgrass and Dade and develop a useful classroom teaching tool. Second, they wanted to assemble an informative and entertaining collection of photomicrographs for bee enthusiasts.

They have succeeded on both counts. The Atlas is filled with photomicrographs made on the scanning electron microscope, making this more than just a pretty picture book. It also has essential features: There is a section on the Natural history of the honey bee which briefly summarizes the life and activities of the beehive. There is a very clear and instructional Appendix which shows the "Major Anatomical Divisions of the Honey Bee" in line drawings. This will help the reader orient to the proper parts of the bee, and to see these parts clearly labeled.

A comprehensive Glossary will help many students study for exams, and beekeepers for master beekeepers competitions. (Did you know that a bleb is any small blisterlike projection?) With the added section of "Selected References" and "Index", the book is complete.

But the meat and potatoes of this book are the plates — nearly the entire book is set up with plates and descriptive text — formated on facing pages. Each caste of the bee is treated: queen, worker, and drone. Each caste is treated from the head to the tip of the abdomen. The use of carefully constructed photomontages help the reader visualize the whole insect while seeing the detail the scanning microscope produces.

There is more detail in this book than one can easily take in at one look. This is the ideal coffee-table book for the beekeeper. It will provide hours of enjoyable reading and learning. More important, this is a book for students and scholars.

While it should become a major textbook, it is challenged by lower cost texts by Dade and Snodgrass. However, for a book of this size and quality, the price is lower than I have seen for other such specialty texts. It is an excellent addition for the public library, the bee club and of course, the serious collector.

I personally disliked the stylized drawing used throughout the book to introduce the plate layouts. While "created for their instructional value and to enhance reader interest" I felt they did neither. In such a precise book, such imprecision is unacceptable. Fortunately, this is a minor fault, and I endorse the book enthusiastically.

? Questions & Answers ?

Q. I have been quite active with bees since 1958 and was never bothered much by stings, but recently I was stung twice and experienced a considerable reaction of itching and rash. What can I expect in the future? Jerald Osierl, Roland, Iowa

A. Sometimes lifelong beekeepers suddenly become hypersensitive to the point that a single sting can be dangerous. A strong reaction at the locus of the sting is not a danger sign, but a generalized reaction, such as a rash over most of the body, can be. Until you are sure that you have not developed a severe hypersensitivity you should perhaps be sure someone is fairly close by when you work with the bees.
— Richard Taylor

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Q. We would like to plant some Vitex Negundo-INCISA as mentioned in your Q & A section. We have tried growing it from seeds, no luck. Where can we get some plants? George Swinson, Mineral, VA.

A. I've had no luck finding a source of plants, but perhaps this planting information will help growing from seeds. Seeds must be cold treated before planting. This can be done 2 ways. If you have a fairly cold winter, plant them outside, either in a pot (my recommendation) or where they are to grow, in the fall. If this isn't possible, wrap the seeds in some damp spaghnum moss and place in a plastic bag. Put the bag in your refrigerator for 3-4 months, then plant outside or start early indoors. Plants will bloom the first year if started (after cold treatment) in February. I have had excellent success with the latter method. Of course, your problem could be related to the viability of your seed, in which case little can be done. Vitex can also be propagated using other methods. Layering, softwood or hardwood cuttings are fairly easy. I have had success with all 3 methods. Most gardening books describe these methods in detail.
— Kim Flottum

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Q. I have read about escape screens, and how the bees in the brood chamber can ventilate the honey in the supers above through these screens. Would eighth-inch peg board work just as well? Joseph Schultz, Valley City, ND

A. The main advantage of escape screens over escape boards is that, in addition to ventilation, the bees vacate the supers twice as fast. The one time I used peg board rather than screen I found that the bees did not vacate the supers as fast, though the peg board does have the advantage of being stronger and more rugged.
— Richard Taylor

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Q. I have started a self-serve honey stand, but have trouble with ants. How can I keep them out? Mike Townsley, Muscatine, Iowa.

A. Ants will not be attracted to well-packaged jars or tight-fitting round sections if there is no stickiness. I have had good luck keeping ants out of my honey house by scattering borax powder on the floor. You can get a big box of it for a couple of dollars at a grocery store. Try scattering it around your honey stand.
— Richard Taylor

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Q. What is the best container for packing cut comb honey? Styrene boxes used for this are very expensive. Dick Johnson, Cranford, NJ

A. If you want to economize, I suggest you wrap the entire comb in saran wrap, but you will then have to sell it directly to the customer, as it will not withstand handling by a middleman. Half-size frames are available for this. The Aebis, in California, just pack irregular pieces of comb in little plastic bags and sell them by weight. Or you can use round sections and let the bees fill the containers for you.
— Richard Taylor

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Q. After extracting my honey at the end of the season, I put the supers back on the hives for the bees to clean up. I always find that they have stored new honey, uncapped, in the supers. How can I get them to store the new honey down below, in their hives? Frederick Walliser, Philadephia, PA

A. Leave an inner cover under the supers when you put them back on the hives, and close the inner cover hole down to a size that will enable only one or two bees at a time to get through. The super will then get licked dry by the bees, but they will be so uninviting to the bees for storage that they will store the late honey in the hive where you want it.
— Richard Taylor

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Q. Jack Mager, in his letter to GLEANINGS (May '86, p. 212), said that bees can be calmed by spraying sugar water flavored with peppermint extract on the landing board of a colony before opening it. Why not add some peppermint leaves to smoker fuel? Edward Reder, Bay City, MI

A. Mr. Mager recommended adding a few drops of peppermint extract to a 50/50 mix of sugar and water. I know of one beekeeper who controls his bees with such a spray and never uses a smoker at all. The discovery is not new. I clearly recall seeing it used fifty years ago. I prefer a smoker, because smoke is neither sticky nor wet. As for adding peppermint to a smoker, I'm sure it would not improve the smoker significantly. I have sometimes added bits of propolis to the smoker, and this works well, but it is hardly worth the trouble.
— Richard Taylor

GET READY . . . EAS - '86

By DR. DEWEY M. CARON

The Annual Eastern Apicultural Society (EAS) Conference promises to be a full and busy 3 ½ days of meetings, competitive shows, fun and friendship. The 1986 conference will be August 6-9 at the University of Delaware Clayton Hall/ Christiana Towers complex centrally located in Newark, Delaware. You won't want to miss this conference.

The program features a good mix of professional speakers and beekeepers who have a story to tell. ***Brian Sheriff from Cornwall, England*** will give us a wonderful glimpse of European beekeeping. We can also travel to China through the slides of ***Paul Schaeffer*** and the Middle East with ***Dr. Massadegh***, an Apiculture Post Doctor at N. Carolina State University.

Dr. Roger Morse will take us into the fascinating world of swarm biology and orientation behaviors while ***Rick Fell*** presents new and exciting finds about queen control in bee colonies. There will be discussions on mites, of course, plus pollination and other topics of interest. Saturday morning we will get to hear both a student and a Professor of Apiculture talk about their studies as EAS honors both with awards. This year the BioServe organization, distributors of the Beltsville Bee Diet will present the student winner with a $500 check in recognition of their achievements.

Thursday and Friday afternoons feature a series of workshops organized by ***Dr. Robert Berthold***. Several workshops on hive products are scheduled. ***Herman Werner***, a Delaware beekeeper, will discuss his method of swarm control and participants will get a complimentary copy of his informative leaflet on the topic. In addition, ***Charles Mraz*** is organizing an apiotherapy session Friday afternoon while Thursday afternoon ***Dr. John Vandenberg*** of USDA Beltsville will give a workshop on Nosema control.

Honey Tasting!

A new EAS feature this year will be a ***Honey Tasting Contest*** Friday afternoon. Participants will have the opportunity to guess the honey floral source of 10 unknowns that ***Ann Harman*** is busy collecting from throughout the EAS states. The Popular ***Bee Beard contest*** will be Thursday afternoon.

Evenings are less serious and more fun at EAS. Wednesday night will be movie night with refreshments and socializing to follow. Thursday we will have a ***Delmarvelous Chicken Barbeque*** in the grove of trees adjacent to Clayton Hall and the beer truck has been reserved for the event. We adjourn inside for DJ music and socializing afterward — bringing the beer truck along. Our ***annual banquet and awards night*** is on Friday as is custom in EAS.

Lodging and Meals

EAS'ers have deluxe accommodations this year in Christiana Towers, a pleasant, tree-shaded 2 minute walk from the meeting hall show area of Clayton Hall. Each room is an apartment with a bedroom (2 single beds), a living-dining-kitchenette room and a private bathroom. There are 1 bedroom and 2 bedroom models. The top floors have a nice view of the surrounding rolling piedmont of Northern Delaware.

You will be able to drive your vehicle to the University of Delaware and leave it parked in one spot this year. A shopping center with grocery, drugstore, liquor store, variety store, etc. is within walking distance of the Clayton Complex. Bring your own utensils and pots to use the kitchenette but everything else is already equipped. The beds will be made and ready for your arrival. All apartments and meeting sites are completely air-conditioned for your comfort.

The meals are also going to be a highlight of the '86 EAS conference. We will use Pencader Cafeteria adjacent to the dorm towers and Clayton Hall. They feature an extensive salad bar, unlimited beverages and seconds *(or thirds)* on everything. Each cafeteria meal will have 2 entrees plus all the extras. They have ice cream too. You won't be able to go away hungry from the cafeteria.

Competition

Each EAS meeting has a large number of contests. In addition to the Honey Tasting Contest and the Bee Beard competition, the annual Honey and Bee Products Show displays our favorite products at their most elegant and perfect best. The honey show each year is one of the best. You have to know what you are doing to get a blue (1st) or red (2nd) ribbon. Competition is only for ribbons and for the coveted trays for best of show in several categories. The Honey Cookery show is always a favorite. In addition we feature a beeswax show, a mead show, a gadgets show and the photography show. The number of categories have increased in photography this year and each is duplicated so those individuals that work best in print media compete only against prints, while slide photographers compete only against other slides.

The commercial exhibits are a kind of competition too at EAS. The 25 or so exhibitors will all be trying to get your hard earned "honey money" with their wares. The commercial exhibit will be centrally located and readily accessible this year. Stop by and chat with your local or national supply dealer and pick up the latest in beekeeping equipment.

Beekeeping Short Course

An important aspect of EAS is education. The EAS meeting itself is preceeded this year by a 1 or 2 day Beekeeping Short Course. The instruction will be for intermediate-level beekeepers. On Tuesday, August 5, beekeeping will be strongly emphasized and there will be hands-on experience using University of Delaware bees. These are educated bees, extensively cared for by undergraduate students and they are all gentle. The Tuesday program will be an excelle

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MOLDED PLASTIC COMB FOUNDATION

By CHARLES J. KOOVER
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To Edward Lloyd Sechrist belongs the credit for having obtained a patent for the manufacture of molded plastic comb foundation. He did not go into manufacturing this plastic foundation and the rights to this foundation lapsed. Anyone wishing to manufacture it and market it can do so at his pleasure without violating any patent rights. To Paul Pierce of Upland, California belongs the credit of being the first one to have manufactured a plastic comb foundation which is acceptable by the bees.

Gossip had it that he was working on the development of a molded plastic foundation. So one day I drove out to Upland and called on him. Well do I remember the occasion. It was 1944 or 45 and Paul came to the door. There he stood and looked me over. When I introduced myself I could see a light go on in his head. Paul was a subscriber to GLEANINGS IN BEE CULTURE and he had been reading my articles. "Come

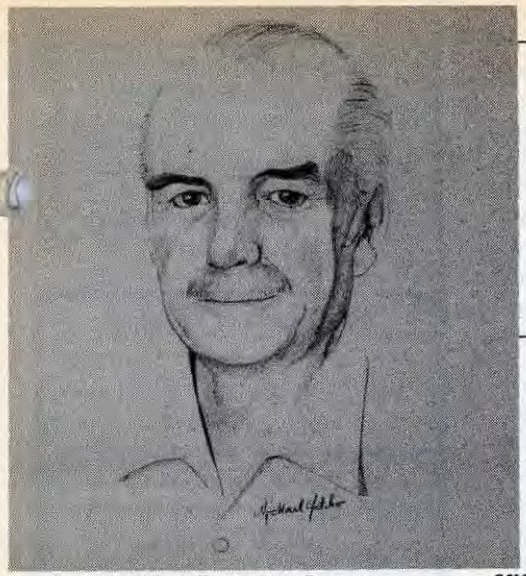
in," he said, and he took me into his confidence and we walked back to his manufacturing plant where he showed me a shallow super with the forerunners of the molded plastic comb foundation he was going to market. In fact he gave me a couple of foundations encased in plastic frames which were going to give him no end of trouble in the years to come.

When I got home I removed the frames around the plastic foundations with a sharp knife with considerable effort. Then I fitted the foundations in wood-frames. Paul had built himself a wax-coating machine which automatically sprayed a thin coat of hot wax on the foundation. Paul is a genius when it comes to creating a Rube Goldberg. And this was it. It was automatic, but one night he forgot to shut if off and in the middle of the night it went up in flames. Undaunted he rebuilt his plant. Would-be manufacturers beware. Wax is highly combustible.

I installed these plastic comb foundations in their wood-frames in a shallow super with other all wax foundations and to my delight the bees drew them out perfectly in no time at all. There was a flow on and they filled those combs without any hesitation and capped them. I was so impressed that I called Paul who came to see for himself what my bees had accomplished. We had lunch together and it started a friendship that has lasted all these years although Paul doesn't think so. For I insisted that he should knock off that encircling plastic frame that surrounds his perfect foundation. We squabbled over that for all of 40 years.

I kept writing about molded plastic comb foundation until the Editor cut me off by not publishing my articles any longer. That was 8 years ago. Time heals all wounds and here I am writing about plastic foundation again. For it has become the accepted thing. However, I ever so strongly feel that it should be carefully wax-coated or the bees will not readily draw it out. I have had plenty of experience with that. Bees are very tolerant and willing to accept a substitute for their own "all" wax combs. But being perfectionists they draw the line when it comes to accepting a poor substitute for the real thing. In my opinion molded plastic comb foundation should be manufactured by specialists who do nothing else. Luckily for us beekeepers the real thing is now available from beekeeping supply manufacturers with or without a plastic frame. So now Paul Pierce and I can renew our friendship. I am told Paul is still alive and well although he is getting hard of hearing and so am I.

I wish to state that unwaxed plastic foundation is a pain in the neck to the bees and me. They work at it half-heartedly and do a slow job drawing it out. I want it drawn out from top to bottom at any time, during a nectar flow or not. You can argue with me but not with the bees. So give them what they want. It's money in the bank to you.□



THE BEE SPECIALIST

by ELBERT R. JAYCOX
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Las Cruces, NM 88001

Avoiding Pesticide Losses

Pesticide losses of honey bees have been reduced in some areas and on some crops by improved application methods such as night treatments, by lower dosages, and by some repellency of newer insecticides. Yet in many parts of the U.S., bee kills from insecticide applications remain the most important problem to beekeepers. In many cases, there is little that beekeepers can do to protect themselves; there are other cases in which a beekeeper, or group of beekeepers, ***can*** do something to reduce or avoid losses from insecticides.

There is no substitute for knowing the area in which your apiaries are located, and being familiar with the crops and pesticide usage in the district around the bees. You can gain such information by talking with local farmers and the agricultural extension agent, who can supply copies of recommended pest control methods.

A beekeeper has to be a good observer of what takes place in his colonies and in the surrounding area. If your bees are short of pollen and there are fields of sorghum or corn within flight range, you can be sure the bees will flock to those crops when they shed pollen and the bees will be in jeopardy from insecticide treatments.

Cover crops of white clover, chicory, and dandelion beneath orchard trees are a sure source of bee losses. These were responsible for pesticide damage to my bees every year at the University of Illinois. Also, look out for lima beans. They are highly attractive to bees and require above-average pesticide usage to produce a marketable crop. In many cases, it is better to stay out of lima bean areas than to risk the possible losses.

Providing water to bees can be of value in two ways in avoiding or reducing losses to insecticides. Water you provide can prevent bees from collecting from contaminated sources. In the event of the loss of field bees, colonies will recover more easily if water is nearby. They may not lose as much brood as they might otherwise during hot weather.

When you post your name, address, and phone number in your apiary you make it easier for people to reach you in relation to crop treatments, vandalism and other dangers to the bees. Put up a sign or stencil the information on hive bodies in letters large enough to be read 50 feet away. If you are afraid that people might know you live a long way from the apiary, at least use your phone number with a statement to call in case of problems relating to the bees.

Covering hives of bees to avoid insecticide losses is rarely a good method, but it has been used successfully on both large and small apiaries. When you know that materials with short residual will be used close to your bees, you can cover the hive with wet burlap for a day or more. Even black plastic sheeting draped over the hives and held in place with soil, strips of wood, or sand-filled "snakes", can protect bees from direct application for short periods in the early morning. Other methods to consider for brief use are sprinklers over the hives (start them before general flight takes place) and crushed ice covered with sawdust at the entrance.

At the Texas meeting in November, beekeeper Bob Stroope suggested putting your bees on the upwind side of a field if you have a choice.That way, the colonies will get less insecticide drift from the prevailing wind. In Bob's case he puts the bees on the south of the field where the south wind is most common.

Felipe And The Coatis

Felipe Corrales keeps bees in northern Sonora, Mexico, near the little town of Baviacora. He has had a series of tough years, with below-average yields of honey. The crop this year is also expected to be down, and the bees are not in the best of shape. Felipe thinks that trachael mites have damaged his bees, but he also tells a sad story about problems with coatis, or coatimundis, during the past winter.

Coatis are tropical animals related to raccoons, but with an elongated body, a long, ringed tail, and a slender, flexible snout. In Illinois, one of my students rescued a coati from the animal shelter and brought it to work with him to the apiary every day. It never seemed to get very tame and hissed loudly when we tried to be friendly. Coatis make good pets, but this one apparently had been mistreated. It was a whiz at getting loose in Jed's apartment, which was full of art supplies; Jed was an art major. The coati managed to take tubes of paint from the cupboard, get them open, and to track the colors all over the apartment.

In Felipe's case, the coatis get his hives open by pushing them over and then scatter the frames while eating honey and brood. Coatis normally eat roots, fruit, seeds, lizards and insects. But groups of 30 or more of the gregarious animals have learned that beehives are a convenient source of tasty food. Heavy rains around Baviacora earlier created good foraging and a big increase in the local population. With no

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controls available, all Felipe can do is to wire the hives together with used baling wire, which has helped.

Coatis range the rocky and wooded areas from southern Arizona and New Mexico to tropical America.

Wild Honey Bees & Disease

This was the title of an article by Dr. L. Bailey in ***Bee World*** in which he tried to sift through the literature to determine whether wild colonies were healthier or more diseased than the surrounding colonies managed by beekeepers.

In the early days in Michigan, all wild colonies were officially condemned and a large number were destroyed without finding a single case of American foulbrood (AFB). At the same time, over 13 percent of the beekeepers' colonies were infected with AFB. Bailey concluded from this and many other observations that the evidence overall did not support a ***firm*** conclusion about disease in wild colonies, but that it seemed low relative to the amount in beekeepers' colonies. The combs of diseased colonies in the wild are usually destroyed rapidly by wax moths, mice, and other predators; diseased combs are often saved by beekeepers, either by intent or by accident.

There is a convincing story from New Zealand that conflicts with Bailey's conclusions. It is part of a thesis by John Smith, Apicultural Advisory Officer in Christchurch. The thesis deals with the production of honeydew honey in the beech forests of the South Island. Smith points out the serious problem created in New Zealand by the German wasp, ***Vespula germanica***, which kills honey bee colonies by raiding them, cutting up some of the bees, and stealing the stored honey. However, their raids do have some value in relation to the control of the weakest colonies, according to Smith, because these may be the ones infected with AFB, either in the wild or being managed. The wasps can kill the bees and remove the spore-bearing honey before other honey bee colonies can rob out the infected colony.

Circumstantial evidence points to a high level of AFB infection in wild colonies in the Canterbury district of New Zealand and its reduction by activities of the German wasp. Smith relates that prior to 1969, when wasps had not yet reached the Hanmer area, any colony moved there had at least a 75 percent chance of becoming infected with American foulbrood disease. Because of this record, the Apiary Instructor placed an unofficial ban on movement of bees into that district. Three years after the German wasp arrived in the area, the threat of disease was greatly reduced. Only 4 hives of 275 inspected in the season of 1977/1978 were infected, just one percent above the Canterbury district average.

John Smith concludes that the actions of an otherwise damaging pest insect, the German wasp, made available many areas for the production of honeydew honey that would have been non-economic because of losses from American foulbrood. However, for clarification, I should add that New Zealand does not allow the use of drugs and antibiotics for the control of bee diseases.

The German wasp is a fairly recent immigrant to the United States and has been spreading westward. In this country it is notable for its close association with man's food and lodging. For example, all the wasps collected by Morse, Eickwort, & Johnson in northern Ohio were caught in beekeepers' honey houses. The wasps are a particular problem because they remain active late in the year, December in Ohio and New York, and can steal honey easily from clustered honey bee colonies.

Perennial wasp colonies in mild climates build huge nests containing as many as 3 to 4 million cells! An aerial nest in New Zealand measured 15 ft. by 5 ft. by 2 ft.

Fueling Women's Bodies

In a newspaper story recently, Jane E. Brody discussed the needs of women leading a "high-energy life." She cited the work of Dr. Holly Atkinson, author of a new book, ***Women and Fatigue*** (Putnam). In it, Atkinson advises avoiding simple carbohydrates — the sugars, including honey and syrup, sugary drinks, sweet snacks and the like. They provide a false and short-lived pick-me-up and then let you down, according to the author. Rather, choose naturally sweet fruits, fresh and dried, and use complex carbohydrates such as whole wheat bread, brown rice and baked potato.

I don't necessarily subscribe to these ideas, but feel you should know what is said about honey in the popular press.□

Testing Your Beekeeping Knowledge

By CLARENCE H. COLLISON
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Communication and regulation of activities by chemicals in the honey bee colony is of primary importance to its success. These chemicals are produced by two basic types of glands: exocrine and endocrine. Hormones regulate growth, development and molting and are secreted by the endocrine glands. Exocrine glands produce various secretions to the body exterior. Pheromones, wax and royal jelly are produced by exocrine glands.

How much knowledge do you have about the glandular system of the honey bee and the chemical secretions of the various glands? Take a few minutes and answer the following questions to find out how well you understand these important topics. The first 6 questions are true and false. Place a T in front of the statement if entirely true and an F if any part of the statement is incorrect. (Each question is worth 1 point.)

1. _____ During the summer, the hypopharyngeal (brood-food) glands shrink as the bees change from nursing activities to foraging, whereas, in the winter bees of all ages have large glands.
2. _____ Juvenile hormone is produced by the corpora cardiaca.
3. _____ The three major honey bee endocrine glands; the prothoracic gland, corpora cardiaca and corpora allata, are found in both adults and larvae.
4. _____ Maximum production of Nassanoff pheromone occurs in nurse bees.
5. _____ Immature queens in sealed cells secrete a pheromone that depresses the production of additional queen cells.
6. _____ Secretions from tiny glands found on the upper surface of the queen's abdomen serve to keep attendant bees, the "court" around the queen.

Multiple Choice Questions (1 point each)

7. _____ Invertase, the enzyme that changes sucrose into glucose (dextrose) and fructose (levulose) during the ripening of nectar into honey is produced by the: A) lining of the honey stomach B) salivary glands C) mandibular glands D) proboscis or tongue E) hypopharyngeal or brood-food glands.
8. _____ Worker honey bees have _____ wax glands.
   A)8 B)4 C)2 D)10 E)6
9. _____ Geraniol, nerolic acid and geranic acid are chemical components of the: A) mandibular gland B) wax gland C) Nassanoff gland D) salivary gland E) hypopharyngeal gland

10. Name three situations when the honey bee will expose it's Nassanoff or scent gland. (Question is worth 3 points.)

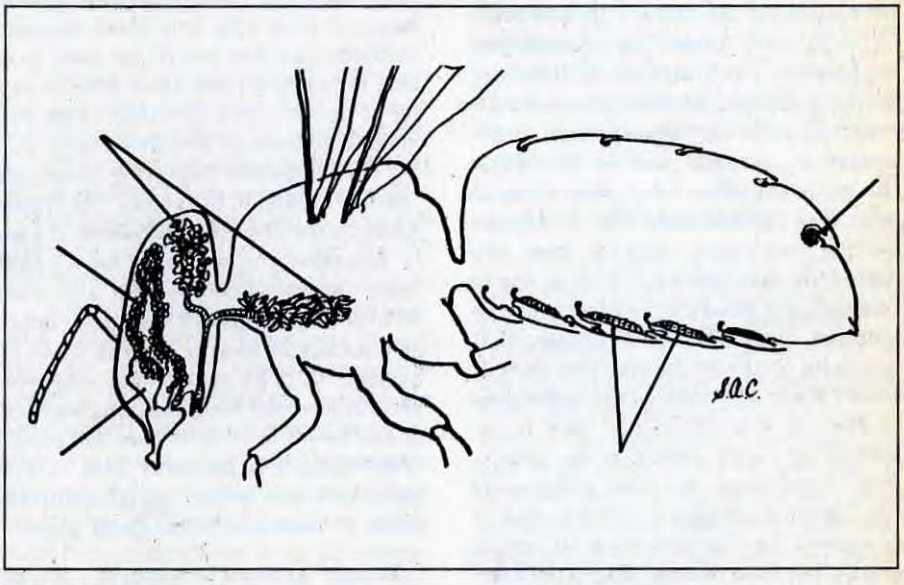
    _____
    _____
    _____

11. Name three ways that saliva, the secretion of the labial or salivary glands, is used by the bee. (Question is worth 3 points.)

    _____
    _____
    _____

12. Listed below are several glands found within the worker honey bee. Please label the diagram that follows with the correct glands. (Question is worth 5 points.)

    A) Mandibular gland
    B) Hypopharyngeal or brood-food glands
    C) Nassanoff or scent gland
    D) Labial or salivary glands
    E) Wax glands



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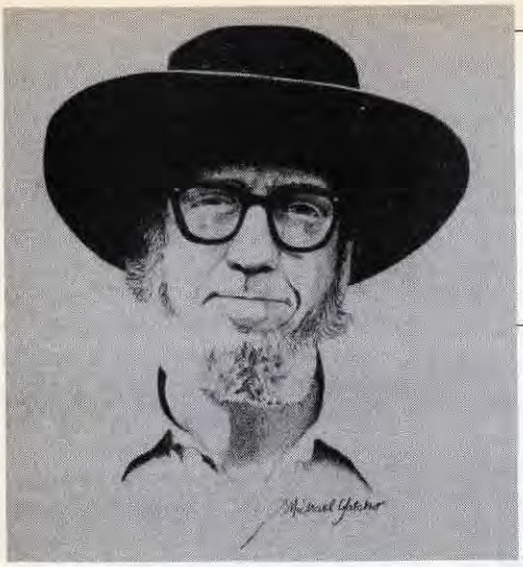

BEE TALK

By RICHARD TAYLOR
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There recently came in my mail, from Belgium, a small book entitled "AT THE HIVE ENTRANCE", by H. Storch. It is a translation from German, and nicely printed and illustrated. In it the author lists one hundred thirty-two externally observable hive conditions and, for each such condition, offers an explanation of its meaning. His idea is that much can be learned about a colony, including what is happening inside the hive, just by noting behavioral patterns, sometimes subtle ones, at the hive entrance. Thus, he notes, one can diagnose robbing by the appearance and behavior of the robber bees, can tell when honey flows start and stop, and can distinguish with fair accuracy most of the diseases to which bees are susceptible without opening the hive and inspecting combs.

Much of what Professor Storch says here seems to me correct. Indeed much of it is well known to experienced beekeepers. The symptoms of dysentery are very obvious, for example, as are the marks of robbing, the expulsion of the drones in autumn, and so on. Some things, on the other hand, seem to me to offer less certain clues than Professor Storch supposes, and a few are downright mysterious. I think no one to this day, for example, understands the familiar "washerwoman" dance that regularly occurs at the hive entrance. It seems always to come at the same time of year — late summer — and is exhibited by every colony in the apiary. Professor Storch, if I have understood him correctly, seems to believe that it is caused by the irritation of pollen grains that have become lodged between the head and thorax of the bee, but this seems to me dubious in the extreme.

The basic point of the book is well made, however, and is worth emphasizing; namely that a beekeeper who familiarizes himself with the behavior of the bees outside the hive, and especially at the hive entrance, can ascertain a great deal about the condition of the colony and what it is doing, without any need to open the hive. This can mean great savings of time for the beekeeper and reduction of disturbance to the bees. Little white pellets at the entrance indicate chalk brood, for instance. Scratches on the front of the hive are the work of a skunk. Many such things are immediately obvious to a good beekeeper. I have always regarded it as an almost sure sign that the colony has a queen if bees are seen carrying pollen. You do not need to open a hive to learn whether it is populous. The density of bees on the inner cover will tell you. And a glance at the sky, where bees can be seen coming and going, will tell you whether there is a nectar flow in progress.

Sometimes you have to go into the hive and remove a comb or two to make sure that all is well, or to check out some ominous sign, but you do not need to do that very often if you know what to look for at the entrance. Certainly there is no need to go through hives routinely, pulling out combs and inspecting brood, and "fooling around in the apiary", as Walter Kelley once described it. About the only occasions you will have for actually removing brood combs from a hive are (1) to divide a colony or rearrange combs as a means of swarm control; (2) to requeen it; (3) to check out some suspected serious disorder such as laying workers or foul brood, or (4) to replace bad combs. Otherwise, it is probably best to just make sure your supers get on and off the hives in time, and leave them alone.

Is that "let-alone beekeeping"? No, not if by that expression one means neglectful beekeeping. But yes, if the alternative to "let-alone" beekeeping consists of taking hives apart every two or three weeks just to see what's going on inside. A good beekeeper has a fairly good idea what's going on inside his hives from week to week without having to open them up to see.

Some of the big commercial beekeepers in these parts almost never actually open a hive. They go around in the spring and pile the supers on, then go around in the fall and remove them, and that is about it. I recently asked one such commercial bee man what he did about swarming, and his reply was direct and simple: "Nothing," he said. That sort of beekeeping, to my mind, verges on the slipshod, but it does indicate what is possible. Another commercial beekeeper once looked at me as if he thought I was out of my mind when I asked him what he did about requeening his colonies. "Do you mean," he asked incredulously, "requeen a colony that's already ***got*** a queen?"

I cannot be so casual about swarming, and I have begun to take the idea of requeening more seriously than I used to. And there is one other problem of management I have begun to be more concerned about, and that is the replacement of defective brood combs, especially those loaded with drone brood. But there is a problem with this, which I have never seen discussed in the literature. What do you do with defective combs you take from a living colony? It will contain either brood or honey or both. If you put all such combs together over a colony to let the brood (whether drone or worker) get hatched out, then the bees will fill them with honey. All right, so you then run them through the extractor — but I have no extractor. I just raise comb honey.

What I have started doing is shaking the bees from such old combs, replacing them with frames of foundation, then putting the old combs in old makeshift hives left right in the apiary. Some of the brood hatches out, if it does not get chilled, and meanwhile the otherwise empty hive serves as a bait hive which might just catch some swarm I don't see. That is not the greatest idea in the world, but then, it is a solution of sorts, and nothing is perfect.

Questions and comments are welcomed. Please use the Trumansburg address and enclose a stamped envelope.□

Burning Beehives Infected With American Foulbrood

By JOAN SPIELHOLZ
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Frames from a hive infected with American Foulbrood are destroyed by burning.

American Foulbrood is a bacterial disease of honey bee larvae that, despite its name, has a worldwide distribution. It is probably the most dreaded bee disease since the infection is *so* highly contagious and if left unchecked, could spread to other colonies. The need to control American Foulbrood (AFB) has led to the establishment of an apiary inspection program in New York State and in other complying honey-producing states. New York State bee-inspectors operate on behalf of the state commissioner of Agriculture, department of Agriculture and Markets, and are responsible for identifying hives harboring active AFB infections.

In 1985, the New York State Department of Agriculture and Markets decided to place the responsibility of disease abatement *back* upon the individual beekeeper once AFB had been identified. This means that beekeepers who have depended on inspectors to both identify and destroy the infected colonies must now learn to handle the procedure of burning and sanitation themselves. This is a controversial issue, but regardless of one's sentiments on this subject, beekeepers all over the country (and the world for that matter) should be aware of the methods used to control this disease.

The introduction of ***Bacillus larvae*** spores, the infectious agent of AFB, can be spread from colony to colony by robbing or drifting bees, or it may be passed along inadvertently by the beekeeper. Feeding honey or exchanging brood combs between hives in the apiary may result in infection, even if the donor colonies are not showing symptoms of the disease. The beekeeper can't be too careful! Even a hive tool or gloves can transfer the spores to a susceptible colony. Spores of ***Bacillus larvae*** are so hardy it has been experimentally shown they can remain viable in scale left by the dessicated diseased brood for ***over 35 years***. Because colonies identified as carrying infection represent a sure threat to the well-being of all other bees in an area, the recourse to control has been to destroy those colonies and prevent the tainted equipment and food stores from coming into contact with other honey bees.

And so the subject of this presentation is a grim one. Once AFB has been identified in a colony by a New York State bee inspector, the colony ***must be burned.*** There is no other approved method at this time to save the bees, honey or frames, but the external hive equipment, the supers, tops and bottomboards can be scorched and recovered. Treatment by antibiotics or other chemotherapeutic agent is not permitted as a cure for diseased colonies since antibiotics do not affect the spores. Ethylene oxide fumigation, which does destroy spores without destroying equipment, has been under experimental usage but is not an approved treatment method in New York. The vapors are extremely toxic to all life forms and only trained personnel can run a fumigation chamber.

So we begin with a diseased colony. Upon inspection and diagnosis of AFB, the hive should be marked, the bees killed and the hive removed from the apiary as soon as possible. A dead colony containing foulbrood spores should ***never*** be exposed to other bees. Before killing the bees, have all the equipment ready for the burning.

The fire is built over a pit at least 1 ½ feet deep. A long-handled shovel, long supports, kindling and kerosene comprise the basic equipment.

You will have to dig a pit to burn the hive over and later bury all the remains. The destruction of the dead hive and all the AFB spores depends on an efficient fire. You will need a long-handled shovel, kerosene, wood for starting the fire — saplings or large pieces to span the hole, and kindling. It is also necessary to check zoning regulations and inform the local fire department if you're in a populated area.

Killing the Bees

To kill an infected colony, a pesticide that is particularly toxic to honey bees, generically known as Resmethrin, is recommended as a safe chemical for human contact with a very quick knockdown of bees. Resmethrin comes in an aerosol container (often marked as "bee and wasp killer") and can be directly sprayed from the top of the hive down in between the frames. The amount used depends on the strength and size of the infected colony. Before application,

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the entrance should be closed off. Once the bees have been sprayed, replace the top cover quickly. It will take some time (½ hour) before all the bees are dead. Bee inspectors often use this time to dig the pit, although the hole can be prepared ahead of time by the beekeeper.

A note here on other methods of killing bees. Cyanide dust which creates toxic fumes equally dangerous to the beekeeper is banned from use in New York and certainly ***not*** recommended anywhere else. Kerosene is often used to kill bees and although we don't give it official "blessing", it is a safe method if done properly. As with the Resmethrin, the hive entrance is first plugged, and this time a ***scant*** cup of fuel is poured on the top bars of the hives and the lid quickly replaced. The fumes will kill all the bees. We emphatically caution against using gasoline in this situation since everyone should be familiar with the explosive nature of volatile gasoline vapors. The kerosene is also later used to start the fire to burn both the dead bees and equipment.

Preparing the Site

The use of a deep hole serves two purposes: first it must contain all the contaminated material once the hive has been burned, and second, it provides the ***aeration*** necessary for a brisk, hot fire, destroying AFB spores. The size of the pit is ***critical*** to the burning procedure. The hole should be at least 1½ feet deep and wide enough to accommodate the amount of equipment to be buried. Avoid digging a pit in an area that will be disturbed. The dirt piled up around the pit also serves a two-fold purpose; it will catch any contamination that may drip from the hive when the bees and frames are stacked on the fire and it acts as a fire break protecting the surroundings from the roaring flames.

The pit is filled with enough kindling to start a roaring fire and saplings or long timbers are set close together to span the hole. The hive equipment is actually burnt above the pit on these timbers. ***Careful here!.*** Choose timbers that won't burn so quickly that they collapse and fall into the pit before all the burning is done. In the case where there are many frames to be destroyed, have extra timbers.

Burning Equipment

Move dead hives away from the apiary quickly. Bring the hive or hives to the edge of the pit and be careful not to drip honey or bees along the way. It is good practice to lay down cardboard or burlap underneath the hive to catch any drips. Later this will be tossed in the fire as well. If it's a windy day, you might check the wind direction to decide where to stand with the hive equipment. On a day in which the wind changes rapidly one can expect to be dodging smoke!

The infected frames are stacked on the supports allowing for proper aeration of the fire below.

Sprinkle a generous amount of kerosene on the kindling in the pit. Construct the contaminated frames in a criss-cross manner along the timbers so air is allowed to penetrate between them, then start the fire. Stand back a few minutes, and as the heat builds up and the shooting flames die down, more frames can be tossed on. The procedure at this point depends on the individual. The dead bees should be added once the fire is going and if there is a lot of honey to be destroyed, it too should probably be put on when the heat is maximal since it harbors much of the spores and tends to initially cool down the fire.

Recovering the Large Equipment

Bees will accept and use wooden hive parts that have been charred so that large equipment can be saved from total destruction by thoroughly scorching the inside areas that came in contact with the bees and honey. Salvaging the larger pieces of equipment, the bottoms, covers and supers, is an alternative to throwing everything on the fire. However, if the equipment is in poor condition, full of holes, thin (less than ¾ inch thick) or broken, it might not be worthwhile to try to recover it. There are two ways to scorch the large equipment; 1) with a blowtorch (a time-consuming, but safe procedure) or 2) in conjunction with the already established pit fire. The ultimate goal of either is to ideally scorch a layer about ¼ inch all around and get into all the crevices. The equipment should be scraped of propolis and all scrapings need to be collected and burned in the pyre. If multiple tops and bottom boards are to be charred, then one may proceed by wetting down the inside-facing surface with a little kerosene and then placing that surface over the fire on the timbers. Allow the surface to catch fire and burn momentarily, then with the long-handled shovel, flip the cover or bottom board out of the pit, fire-side down. This estinguishes the flames.

The fire roars through a stacked "chimney" destroying all the spores. After a few minutes, the lid is thrown on and the air is cut off, quickly extinguishing the flames.

The "chimney" method is used to recover supers. It is the preferred method performed by bee inspectors who need to be both efficient at controlling foulbrood as well as with their use of time. The technique is a tricky one; the goal is to get a brisk fire going that can rise out of a stack of supers like a chimney, and sufficiently scorch the inner layers. The key to success here is getting proper aeration from the bottom and turning the process off when the flames have scorched deep enough.

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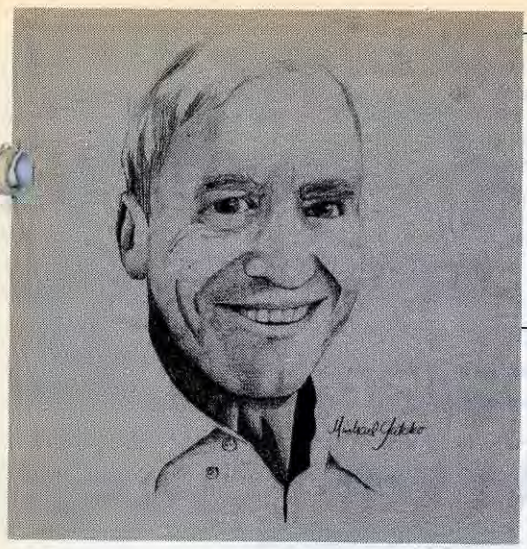

SIFTINGS

By CHARLES MRAZ
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One meeting I look forward to every year is the one held by the Eastern Apicultural Society. This year it will be held at the University of Delaware in early August. It was at one of these meetings some years ago in Virginia that I became acquainted with tree ripened peaches. I love peaches and when I bought a bushel at a road stand in the Shenandoa Valley, the flavor was like heaven to me. It is too cold for peaches in Vermont, so all we can buy are the green peaches, hard and no flavor that tend to rot before they ripen. Every year since, I have made a practice of buying ten to fifteen tree ripened bushels of peaches right from the orchards. Soon as I get them home we have a busy time canning or freezing and enjoy eating them all winter.

On the subject of freezing and canning fruit, I wonder how many beekeepers use honey for this purpose? If you love all kinds of home processed fruit as I do, try using honey for both canning and freezing; peaches, strawberries, raspberries, blueberries, etc.; you will be amazed at the difference.

We used to freeze fruit with nothing added, just the plain fruit. Then, we would add honey to sweeten them as we ate. No beekeeper should even think of using anything else for sweetening but honey. A friend of mine was freezing strawberries one year and he added honey before freezing. He assured me that you must add the natural, unprocessed honey to the berries ***before*** freezing, they keep better.

At that time I had a bushel of strawberries I had already frozen with nothing added. To the second bushel of berries we added about a big tablespoon of mild clover natural honey per quart of fruit and mixed it in with the berries before freezing. The following winter we ate these berries to compare the difference. And what a difference!!! You won't believe it until you try it. When they thawed, those frozen plain berries had a grey look to them with little color or aroma.

Those frozen with honey at the same time had a bright red color, just like fresh berries, and the aroma and flavor were just as if they came from the garden! After that we froze and canned all our fruit with honey. It should be mild flavored to not change the flavor of the fruit. It does not take much honey so it adds very little to the sweetness, but it does indeed preserve the color and flavor better than anything else you can use. It would make quite a hole in our surplus honey if every beekeeper would use natural honey just to process their fruit ***and tell others to use it.*** It is tragic that even beekeepers do not appreciate what wonders honey will do and it is time we learned. So at the 1986 EAS meeting I will be shopping around near Delaware for 15 bushels of delicious flavored, tree ripened peaches to take to Vermont with me.

•

With the wonderful help of Dewey Caron at the next EAS meeting in Delaware, Friday afternoon, August 8th, we are planning to have an Apiotherapy meeting and workshop for all those beekeepers interested in Bee Venom and other therapies related to bees. We expect to have a doctor join us, who is a specialist in all forms of Acupuncture and its relationship with Bee Venom Therapy, talking about trigger points and meridians. There are many of us active beekeepers that have been using Bee Venom Therapy with some amazing results. This meeting will give us a chance to discuss these results with each other so that we can continue to learn more about this most effective treatment for pain of all kinds. We will also have demonstrations so those not familiar with it will have a chance to learn how to use it. There appears to be no limit to the many conditions for which Apiotherapy appears to be effective. Even after 50 years of experience of my own and that of others, I am still learning new uses for Bee Venom Therapy. I am sure many of you other beekeepers with experience have found other interesting uses for the treatment that you would like to share with others. So we will see you in Delaware August 8th at the Apiotherapy Meeting.□

RESEARCH REVIEW

By DR. ROGER A. MORSE
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Climate and Africanized Honey Bee Aggressiveness

A topic that has been both overlooked and avoided by many is how aggressiveness in the Africanized bees in Brazil changes as the climate changes. That this might be an important consideration was noted by Rothenbuhler in 1974; he visited Brazil in 1972 and observed Africanized colonies there.

A more thorough study was conducted by Brandeburgo, Goncalves and Kerr (1982). This research was financed by the U.S. Department of Agriculture and the results have been available since 1977 when they were first released in mimeographed form.

Two apiaries were established. One was near Recife, a city in northern Brazil about eight degrees south of the equator. The second site was near Ribeirao Preto, about 2500 kilometers (approx. 1500 miles) south at about 22 degrees south latitude. Recife is much warmer and more humid than Ribeirao Preto. Tests were conducted over a period of two years. The physical features of the two locations are very different and are shown below in Table 1. These data were taken from meteorological stations in the two areas.

Table 1. Physical Features of the Brazilian Test Sites

	Elevation	*Mean Temperature*	*Mean Humidity*
Ribeirao Preto	621 meters	21°C (70°F)	50%
Recife	120 meters	26°C (79°F)	66%

The procedure in these tests was as follows: Forty colonies were placed in Langstroth hives in each of the two locations using local Africanized bees at each site. The research was carried out from 1975 to 1977; at that time it was well known that the bees in both locations were thoroughly Africanized and thus "each lot had bees with a gene pool representing the typical genotype from the region". The bees were tested for aggressiveness by jerking a small black leather ball stuffed with cotton up and down in front of the colonies for a given period of time. The technique had been devised in 1970 by Brazilian Dr. Antonio Stort and has been used by many people since that time. One may make a number of measurements using this technique including the number of stings in the ball, the distance the observer is followed by aggressive bees, the number of stings in the observer's gloves, etc. About 45 days were required to test the aggressiveness of all of the hives in both locations each time; the observations were not hastily done.

After the first series of tests were completed queens from 30 colonies in each group were swapped; ten colonies were left with their original queens as check queens. The queens were placed in queen cages with a small number of their workers and flown back and forth between the two sites. Not all of the queens survived and those that died were replaced by queens from the dead queen's original location. The colonies were rechecked for aggressiveness 70 days after the queens had been exchanged; in this period of time the bees tested would-be offspring of the queens in their respective hives since this is nearly twice the life span of a worker bee in Tropical and Subtropical areas. This swapping of queens was repeated four times in the two year period. A total of 213 colonies, of which 152 had transferred queens and 61 were control colonies, in which the queens were not moved, were tested. I am giving here a quick overview of the experimental methods, but in reviewing the paper it appears to me that the experimental design was very good.

The results were that the control colonies in Recife were three to fourteen times more aggressive than the bees in the cooler, though subtropical climate of Ribeirao Preto. Equally important, bees from both areas showed the same aggressive response when tested together in Ribeirao Preto and when tested again in Recife. In brief, climate made a difference, in the warmer climate the bees were more aggressive.

Dietz et al. (1985) were the first from North America to make a detailed study of the bees in Argentina. Their study was done in 1983 and 1984; it is unfortunate this was not done many years ago. It was found that Africanized bees were further south in that country than had been previously reported. Some highly aggressive bees were found in the southern part of Buenos Aires province but morphometric analysis indicated these bees were European. Dietz et al. point out that not all aggressive colonies in Argentina are Africanized bees.

I discussed what I have written here with Professor Dietz (University of Georgia). I had visited Argentina in January and the small number of colonies I examined were European in my judgement. Dietz had checked about 1300 colonies in 17 Argentine provinces so he clearly has the greater experience and his data show clearly the Africanized bees were more widely found in Argentina than we had suspected; however, apparently the Africanized bees do not dominate as they do further north. He also indicated to me that there were many migratory beekeepers in Argentina and thus man, not nature, had much to do with the distribution of honey bees in that country.

A point on which we clearly agree is that more study is needed of the bees in South America and especially Argentina. Too few people have examined the Argentine situation closely. There is no question in my mind that Africanized bees will soon be found in Mexico and along our border with that country. It

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is my view that the situation will not be so disastrous as some would lead us to believe. I suggest it will be "hot" stories in the press that will be the greatest problem. However, at present we are speculating with very little data and are missing an opportunity to better prepare ourselves. Ecologists who are interested in the spread of animals are also missing a great opportunity to learn more about how such spread occurs.□

References

Brandeburgo, M.A.M., L.S. Goncalves and W.K. Kerr — Effects of Brazilian climate upon the aggressiveness of Africanized colonies of honeybees. Final Report U.S.D.A. Project 12. 14. 7001-362. Mimeographed. 35 pages. 1977.

Brandeburgo, M.M., L.S. Goncalves and W.E. Kerr — Effects of Brazilian climatic conditions upon the aggressiveness of Africanized colonies of honeybees. Social Insects in the Tropics. Pierre Ja Son, Universite Paris Nord. pp. 255-280. 1982.

Dietz, A., R. Krell and F.A. Eischen Preliminary investigation on the distribution of Africanized honey bees in Argentina. Apidologie 16:00-107. 1985.

Rothenbuhler, W.C. Further analysis of committee's data on the Brazilian bee. American Bee Journal 114:128. 1974.

Stort, A.C. Metodologia para o estudo da genetica da agresividade de Apis mellifera. Anais do lo Congresso Brasileirao de Apicultura. pp. 36-51. 1970.

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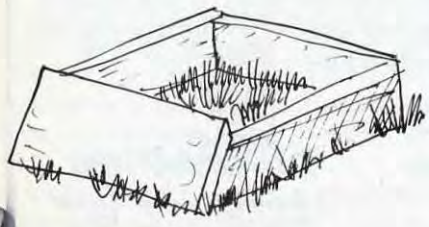

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PESTICIDES AND BEES

By STEVE TABER of Taber Apiaries
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There is nothing more upsetting to bee lovers than to have some idiot kill some of their bees with the use of a pesticide. When it happens to me, or to my bees, I get very angry and I know that doesn't do any good. Pesticides and bees, farms, crops and pesticides — that's what this article is about, along with suggestions as to what you can do in your state for your own protection.

Here in California where I keep my bees, the farm community has been made aware of the importance of pesticides as well as bees many years ago. Because of that recognition, laws and regulations were passed making life a bit easier for the beekeeper and not any more difficult for the pesticide applicator or farmer.

Pesticides are put into 3 broad classes which represent their toxicity to bees. Class 1 is highly toxic. An applicator is required to give a beekeeper who has bees within a one-mile radius a 48-hour notice before he applies the pesticide. The beekeeper has to register his apiary location with the county in order to be notified by the applicator. When the applicator goes to the county agricultural office for his pesticide permit, he is required to ask about the presence of bee colonies within a mile radius of the proposed application. No problem? Think again.

We move our bees many times during the year. Perhaps you may keep your bees in the same location, but it is not unusual for us to move entire bee yards three or more times a year. Sometimes when the bees are moved to an almond orchard for pollination purposes they are under contract to another beekeeper who has the primary contract for the pollination in the orchard. Most of the time, the orchard owner won't spray while the trees are in bloom, but neighbor farmers who grow alfalfa will spray during bloom to control a pest in their fields. If we have forgotten to register the new locations of our bees in the orchards, we could get hurt. And we have.

Another problem developed here a few years ago when an orchard grower did not believe bees were necessary in his almond orchard to set a crop. He sprayed his orchard when it was in full bloom. That illegal action resulted in the death of many bees. The beekeeper who lost the bees in a neighboring orchard brought suit against the grower. The judge ruled against the beekeeper because he had not registered the colony locations in the orchard. Fortunately that did not happen to me, but I did have two kills this year.

The first was when an orchard owner who rented my bees wanted to spray his apricots that were in full bloom with a highly toxic chemical. (That just proves how stupid some people can be. There is no professional advice given anywhere for the past 30 years recommending spraying toxic materials on fruit trees in full bloom.) I suggested he spray the material during late evening. He did not, and I lost many bees.

Part of a bee kill from a toxic spray — Furadan — applied near my bees March 20. I estimated 2 pounds of bees were lost from each hive which is not only an economic loss to me and my bee hives but it makes me mad as hell.

In my second case, a settlement is now being negotiated. The applicator applied for a permit at the county agricultural office and forgot to ask about bees. Consequently, he was not notified about the location of my apiary which was 300 yards from the sprayed field. I had 57 colonies and 348 queen mating nucs in the yard. I think I will be compensated, but won't know for awhile. The most troubling thing is that in most all cases of bee kill, it's because of stupidity on some person's part.

Okay, if it's stupidity, don't let it be on your part — know your rights. Since they vary from state to state, contact the county or state extension agent and find out exactly what your rights are. Find out what the laws and regulations are that will support you. If you live in an intensive agricultural area, as I do, I suggest you pay a visit to the spray applicators (there are two in my county) and talk over your mutual problem. They are going to spray, so your job will be to convince them to use a less toxic material and to apply it at the best time of the day for the bees, which is usually late evening.

Finally, because there are so many new people coming into beekeeping all the time and because memories and toxic farm chemicals are changing, have your bee club schedule an expert to talk to your group about protecting your bees. You will be able to get this information from your county agent or extension entomologist. More general information can be obtained from Federal USDA bee laboratories.

Currently, bee protection laws are under review and will be changed here in California to help the beekeeper and the grower/pesticide applicator. However, I think that people would be interested in a summary of current laws and regulations as they pertain to protecting bees and beekeepers. For a complete copy send $1 to cover cost of copying and postage.

The beekeeper shall register with the county agricultural commissioner the exact locations of his apiaries and the number of colonies at each apiary. Each apiary will be clearly identified as to the

Continued on Next Page

TABER . . . Continued from Page 347.

owner and a telephone number.

Each person intending to apply any toxic pesticide to bees shall inquire of the agricultural commissioner whether there are any bees within a one-mile radius of the application site. The applicator shall notify the beekeeper at least 48 hours in advance of the application.

The following is a list of pesticides rated "highly toxic", "moderately toxic" or "relatively nontoxic" to bees. This material is taken from a University of California publication, "Reducing Pesticide Hazards to Honeybees," authored by E. L. Atkins, D. Kellum and K. W. Atkins at the Dept. of Etomology, Riverside, CA. Complete publication is available by writing to: Cooperative Extension, USDA — Univ. of California, Berkeley, CA. 94720. Ask for leaflet 2883.□

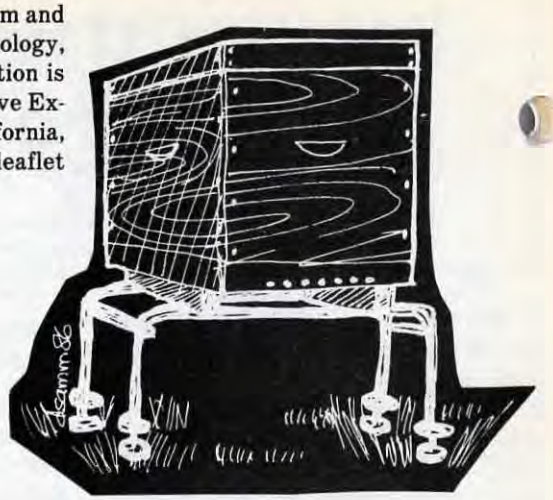

TABLE 1 — RELATIVE TOXICITY OF PESTICIDES TO HONEY BEES DETERMINED BY LABORATORY AND FIELD TESTS (California, 1950 through 1980.)

GROUP I — highly toxic: Severe losses may be expected if used when bees are present at treatment time or within a day thereafter, except where noted to the contrary.

Pesticide (trade name and/or common name)

aldrin
Ambush® , permethrin
arsenicals
Avermectin®
Azodrin® , monocrotophos
Baygon® , propoxur
Baytex® , fenthion
Bidrin® , dicrotophos
Bux® , bufencarb
carbosulfan, FMC-35001
Cygon® , dimethoate
Cythion® , malathion
Dasanit® , fensulfothion
DDVP® , dichlorvos
Dibrom® , naled
Decis® , decamethrin
De-Fend® , dimethoate
diazinon, Spectracide®
dieldrin
Dimecron® , phosphamidon
Dursban® , chlorpyrifos
Ekamet® , etrimfos
EPN
Ethyl Guthion® , azinphos-ethyl
Famophos® , famphur
Ficam® , bendiocarb
Folithion® , fenitrothion
Furadan® , carbofuran
Gardona® , stirofos
Guthion® , azinphos-methyl
heptachlor
Imidan® , phosmet
Lannate® , methomyl
Lorsban® , chlorpyrifos
malathion
Matacil® , aminocarb
Mesurol® , methiocarb
methyl parathion
Monitor® , methamidophos
Nemacur® , fenamiphos
Nudrin® , methomyl
Orthene® , acephate
parathion
Pay-Off®
Phosdrin® , mevinphos
phosphamidon, Dimecron®
Pounce® , permethrin
Pydrin® , fenvalerate
resmethrin, Synthrin®
Sevin® , carbaryl
Spectracide® , diazinon
Sumithion® , fenitrothion
Sumithrin® , d-phenothrin
Supracide® , methidaathion
Tamaron® , methamidophos
Temik® , aldicarb
tepp
Vapona® , dichlorvos

GROUP II — moderately toxic: Can be used around bees if dosage, timing, and method of application are correct, but should not be applied directly on bees in the field or at the colonies.

Insecticide (trade name and/or common name)

Abate® , temephos
Agritox® , trichloronate
Bolstar® , sulprophos
Carzol® , formetanate hydrochloride
chlordane
Ciodrin® crotoxyphos
Counter® , terbufos
Croneton® , ethiofencarb
Curacron® , profenofos
DDT
Di-Syston® , disulfoton
Dyfonate® , fonofos
endrin
Korlan® , ronnel
Larvin® , thiodicarb
Metasystox-R® , oxydemetron-methyl
Mocap® , ethoprop
Perthane® , ethylan
Pyramat®
Sevin® 4-Oil, carbaryl
Sevimol® , carbaryl
Systox® , demeton
Thimet® , phorate
Thiodan® , endosulfan
Trithion® , carbophenothion
Vydate® , oxamyl
Zolone® , phosalone

GROUP III — relatively nontoxic: Can be used around bees with minimum injury.

Insecticides and Acaracides (trade name and/or common name)

Acaraben® , chlorobenzilate
allethrin, Pynamin®
Altosid® , methoprene
Baam® , amitraz
Bacillus thuringiensis; Bactur® , Bactospeine® , Bakthane® , Dipel, Thuricide®
Birlane® , chlorfenvinphos
Comite® , propargite
cryolite, Kryocide®
Deinav® , dioxathion
Dessin® , dinobuton
Dimilin® , diflubenzuron
Dylox® , trichlorfon
ethion
Fundal® , chlordimeform
Galecron® , chlordimeform
Heliothis polyhedrosis virus
Kelthane® , dicofol
Mavrik® , fluvalinate
methoxychlor, Mariate®
Mitac® , amitraz
Morestan® , oxythioquinox
Morocide® , binapacryl
Murvesco® , fenson
nicotine
Omite® , propargite
Pentac® , dienochlor
Pirimor® , pirimicarb
Plictran® , cyhexatin
pyrethrum (natural)
rotenone
sabadilla
Sayfos® , menazon
Sevin® SL, carbaryl
Sevin® XLR, carbaryl
Smite® , sodium azide
Tedion® , tetradifon
Tetram®
Tokuthion® , prothiophos
Torak® , dialifor
toxaphene
Zardex® , cycloprate

Fungicides (trade and/or common name)

Afugan® , pyrazophos
Arasan® , thiram
Bayleton® , triadimefon
Benlate® , benomyl
Bordeaux mixture
Bravo® , chlorothalonil
captan
copper oxychloride sulfate
copper 8-quinolinolate
copper fulfate
Cuprex® , dodine
cupric oxide
cupric hydroxide, Kocide®
Delan® , dithianon
Dessin® , dinobuton
Difolatan® , captafol
Dithane® D-14, nabam
Dithane® M-22, meneb
Dithane® M-45, manzeb
Dithane® Z-78, zineb
Du-Ter® , fentin hydroxide
Dyrene® , anilazine
ferbam
glyodin
Hinosan® , edifenphos
Indar® , butrizol
Karathane® , dinocap
Lesan® , fenaminosulf
Morestan® , oxythioquinox
Morocide® , binapacryl
Mylone® , dazomet
Phaltan® , folpet
Plantvax® , oxycarboxin
Polyram® , metiram
Ridomil®
Sisthane, fenapanil
Smite® , sodium azide
sulfur
thiram, Thylate®
thyfural
Vitavax® , carboxin
ziram, Zerlate®

Herbicides, Defoliants, and Desiccants (trade and/or common name)

AAtrex® , atrazine
alachlor
Alanap® , naptalam
Alopex® , clofop-isobutyl
Amex® 820, butralin
Amiben® , chloramben
amitrole
Ammate® , AMS
Aquathol K® , endothall, dipotassium
Avenge® , difenzoquat

Continued on Page 361

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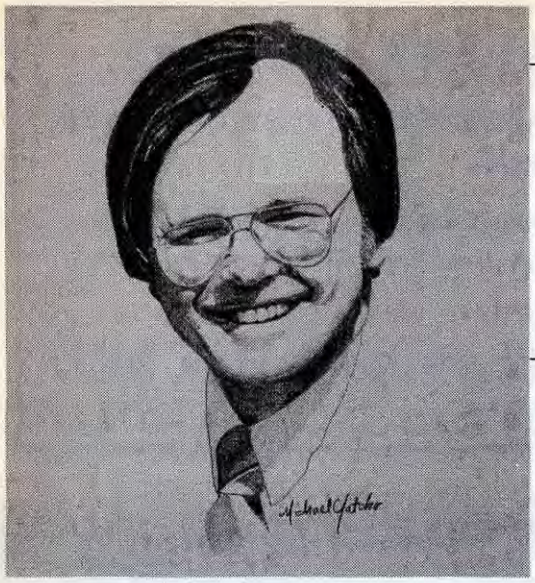

ANAPHYLAXIS AND THUNDERSTORMS

By DR. JAMES TEW
The Agricultural Technical Institute,
Wooster, Ohio 44691

As I write, I am sitting through a mild thunderstorm. I watch it come across the lake on which our fishing cottage is situated. It is basically a very pleasant storm — threatening skies, distant thunder that grows nearer with each report and, of course, the mandatory lightening. The storm passes, water drips from the eaves of the house, and blue skies return — just like something in a movie.

How much this reminds me of a distant but impending problem (on the distant horizon) for some beekeepers. Anaphylaxis — beekeepers' own distant approaching thunderstorm, is a rare but potentially serious problem.

I am reluctant to write about the potential problems of a sensitive person being stung and then having a problem. Unlike systemic reactions which may (or may not) occur sometime after a sting (usually several stings), anaphylatic reactions are serious medical emergencies which can lead to respiratory failure, hypovolemic shock, and sudden death.

Usually the anaphylatic reaction is preceded by some very obvious symptoms. The individual may complain of headache and dizziness or may appear disoriented. The individual usually has a feeling of impending doom and may be very anxious about their condition. In short, the individual feels that they are about to die. Outwardly, they may show hives and swelling, notably around the lips, eyelids or tongue, and will feel very warm. Swelling is the major concern. If the upper or lower air passages begin to swell closed, the individual simply suffocates. As if that were not enough, cardiovascular problems can arise. Unlike the obvious symptoms of respiratory failure, cardiovascular problems are not as easy to recognize. Even if medical assistance is available, the duration of the anaphylatic shock can vary from a few hours to several days.

Please understand, there are many potential causes of anaphylaxis besides the venominous stings of bees, wasps, hornets, jellyfish, snakes or spiders. Occasionally, common medicines, antibiotics, diagnostic agents, or local anesthestics can cause the symptoms listed above. That's bad enough, but some people have shown problems with shellfish, seafood, soybeans, strawberries, tomatoes, spinach, seeds, chocolate, citrus products, eggs, milk, grain products, and various vegetable oils. Bee stings are a potential problem, but they are certainly not the sole causative agent.

I am comfortable and relaxed as I write this. I hope you are comfortable and relaxed as you read it. As with so many other potential, but unlikely, emergency medical situations, one is rarely quiet and relaxed when the emergency actually occurs — neither the victim nor the assistant.

Since unconsciousness occurs frequently with anaphylaxis, most of us will depend on others for assistance. The assistance we will be seeking usually comes in the form of an injection of epinephrine. It would not be appropriate for me, untrained as a medical specialist, to give detailed instructions for giving an injection. You should seek that information from your family physician, and long before it is needed.

Accidents, health problems, and natural disasters are all potential occurrenes. One shouldn't get anaphylaxis out of proportion to the likelihood of its occurrence. A generalized reaction is (unfortunately) common and does not, for most of us, carry life threatening problems. If one is stung and it swells locally, is fevered, and hurts, that is definitely a reaction, but thankfully, not life endangering. Most of us witness these lesser reactions. If the victim has doubts, then off to the physician you should go. Physicians are usually not beekeepers. Frequently, they will advise that the affected individual avoid bees and beekeeping. I think that's unfortunate for most because many stings are administered each year that accomplish little more than a temporary reprimand. I hope beekeeping physicians will not be too harsh on me. I appreciate, very much, the difficulty one faces when recommendations are required as to how to manage bee or wasp stings.

Emergency kits for anaphylatic shock are available upon a physician's advice. Normally only individuals who are highly allergic to insect stings should carry one. However, those teaching classes or handling bees at public events may want to be trained in the use of the emergency kits and then have one readily available.

The following are possibilities:
(1) EpiPen Auto-Injector (Center Labs) delivers 0.3-mg I.M. dose of epinephrine 1:1,000 in 2-ml disposable injectors.
(2) EpiPen Jr. Auto-Injector (Center Labs) delivers 0.15-mg I.M. dose of epinephrine from epinephrine injection 1:2,000 in 2-ml disposable injectors.
(3) Ana-Kit (Hollister-Stier Laboratories) includes epinephrine 1:1,000 (two 0.3-mg doses) in 1-ml; one disposable sterile syring; chlorpheniramine maleate, 2-mg (four chewable tablets); sterile alcohol pads (two each); tourniquet (one each).

I hope the information presented here is never needed by anyone; however, one should "Be Prepared".□

BIBLIOGRAPHY

Randall, Brendal J. 1986. Reacting to Anaphylaxis. Nursing 86: 16(3)34-39.

ONE STATES EFFORT TO MINIMIZE BEE LOSSES DUE TO INSECTICIDES

Larry Connor, Ph.D. • P.O. Box 817 • Cheshire, CT 06410

On April 1, 1981, April Fools Day, beekeepers met in Waterbury, Connecticut to study ways to minimize the impact of insecticide applications on honey bees. Initial efforts to do ***'something'*** about the honey bee/insecticide problem were triggered by the threat of wide-spread spraying to control the gypsy moth caterpillars in the forest environs of Connecticut. The prime control-agent candidate for the task was carbaryl (Sevin), manufactured by Union Carbide. Hundreds of thousands of acres of woods and residential areas were due to be defoliated — a dramatic condition which eliminates all leaves from nearly all species of trees — even pines — and creates a 'winter' appearance in the middle of summer.

Fortunately, the state of Connecticut was not planning a wide-spread treatment, largely because of the lack of monies for such an effort, and a highly placed conclusion that such applications were not needed. Both the state entomologist and the state forester noted that most trees would re-foliate, using food stored in the roots of the plant. Repeated defoliation in following years would use more of the stored food, so that after several years the food would be gone and the tree would die. But because the gypsy moths run in cycles, the forestry people predicted only a 10% increase in the mortality of the forest. This was apparently an acceptable loss to them, and they decided not to spray.

But for individuals with a yard or an estate filled with large, valuable trees, the loss of one tree would be unacceptable. Plus, the defoliation process, with caterpillars everywhere dropping fecal material, and allergic responses to caterpillar hairs, motivate many people to get rid of the pests with chemical controls. So many private individuals were deciding to have their property sprayed to control the caterpillars.

This is where the problem arose for beekeepers. If one application is made, by one applicator, on one date, then the overall hazard to neighboring colonies is restricted to a limited time period. But if hundreds of applications, made by dozens of applicators, are made over a 6 week period, then the risk to the bees is greatly increased.

Since Connecticut is filled with hobby beekeepers, such a procedure would place stress and strain on bee colonies, and even kill a number of them outright. In 1980, while the gypsy moth population was increasing, a number of beekeepers experienced injury and even death to the colonies. The beekeepers had every reason to be concerned.

Press Packages . . . Speaking engagements and Extension Agents were all helpful . . .

In the above mentioned April Fool's Day meeting, the State Entomologist of Connecticut, Dr. John Anderson, flatly stated that there was no problem with bee kills in Connecticut due to gypsy moth spraying. He was strongly challenged by a vocal group of beekeepers who insisted that he was ***wrong, very wrong***. That statement, and the resulting challenge, turned the tables on the pesticide picture in Connecticut, and lead to a comprehensive documentation of bee losses due to insecticides and a very comprehensive analysis of the materials involved.

Anderson and the Connecticut Agricultural Experiment Station, the agency where he is housed, decided to start the expensive process of making routine samplings of dead bees for chemicals which may have been the cause of death. This sampling started in 1981 on a limited basis, and has continued every year thereafter, with some rather interesting results. Any Connecticut beekeeper with a suspected loss was visited by the apiary inspector, a sample of bees collected, and the sample analyzed for the compound. This process continues today.

The system is far from fool-proof, but it is believed to be the most comprehensive state-wide screening program operating in the country. Some samples were lost — a number of frozen samples were ruined last year when hurricane Gloria knocked out electrical power. Some samples are collected too late — the bees have been dead for some time and the residue amounts are inadequate for proper analysis. But overall, a meaningful set of data have been collected each year since 1981. The screening program is a broad-based approach, and does not look for just one compound.

First, it was clear that Sevin (carbaryl) was killing bees. There were numerous samples of bees which were found to contain the carbaryl residues. But perhaps because the amount of acreage sprayed was small, or because of the early timing of the sprays (May and June), many colonies had adequate time to recover and rebuild their populations. But some colonies were killed outright. Certainly in both 1981 and 1982, I found dead bees in front of every Connecticut hive I visited during the gypsy moth spraying period. Fortunately, the numbers of bees involved in each colony were usually small — sometimes only a few bees dying on the landing board. But the bees were characteristic by all being young nurse bees — fuzzy bees with soft bodies, with their midguts filled with bright yellow or orange pollen. These bees had emerged, started feeding upon pollen and had died. Older bees would carry them out of the hive when they would start to show the symptoms of carbaryl poisoning — paralysis-like movements and a complete inability to fly. Field bees had returned to the hive

Continued on Next Page

CONNOR . . . Continued from Page 351

Typical carbaryl-caused mortality at the entrance of a colony. Minor poisoning was reflected in the continued appearance of dead and dying bees at the entrance. House bees were constantly carrying these bees away from the colony, so no typical pile of dead bees developed at the entrance.

with carbaryl-loaded pollen, placed the pellets in the pollen cells, and house bees had pushed the pollen into the cells. These bees were not apparently affected by the insecticide. But when the nurse bees ate the pollen — they died.

By carefully pulling off the abdomen of these bees, you could see the honey sac and midgut very clearly. The midgut was filled with orange material - insecticide contaminated pollen.

Other insecticides were certainly involved — more than anyone would have initially predicted. The most critical material was micro-encapsulated methyl parathion (MMP). Unlike carbaryl, MMP was often fatal to colonies. This was thought to be due to a variety of factors: the later timing applications on sweet corn and apples during June, July and August; the lack of diversity of forage during the spray time, when sweet corn fields were especially attractive; the lack of build-up time for the colonies before winter; and the combination of MMP with other insecticides. The impact of the MMP kills took the heat off the gypsy moth sprays, at least in some people's minds.

This mixing of insecticides was the second big discovery. Many samples contained two compounds, and a few even contained three, four or even five different pesticides in the same bee sample. This may indicate that more than one compound was being used in the area of the spray, and that different loads of contaminated pollen were being collected. Or it could indicate that applicators were mixing two materials and applying them at the same time.

It probably means both situations were taking place in different locations.

Third, some of the residues contained unexpected compounds. For example, a few samples contained chlorodane — banned in Connecticut for use — but apparently still in the possession of an applicator or homeowner and pulled off the shelf by an individual unaware of or unconcerned about the ban.

In another case, residues of captain, a fungicide, was found mixed with an insecticide. Was the captain killing bees? Or was it only found in the sample coincidentally to the insecticide. Or, did the captain render the insecticide even more toxic than when found by itself? Unfortunately, no one knows the answer.

During this period, a few beekeepers did some strange things. A few became the ultimate source of information about insects, insecticides, and related matters when they actually knew very little. I can attribute some of this to a bit of hysterical rage over the loss of their colonies to a spray. As a result, beekeepers were being quoted recommending homeowners spray their trees with milk, detergent, last year's dead gypsy moth caterpillar juice, and other home remedies. Unfortunately, these were not effective recommendations, except for the detergent — which did indeed kill the caterpillars. But it also killed the leaves on the tree, defeating the purpose of spraying in the first place! Some beekeepers confused the behavior of different species of insects — mistaking tent caterpillars with gypsy moths — and saying so in public!

Second, a few beekeepers suddenly became medical experts. They were blaming birth defects, cancer, and other human maladies on insecticide sprays. This was especially true when a TV or newspaper reporter was present. Granted, these are genuine concerns of many people (including myself), but the medical evidence is lacking for the most part. Instead of fighting to get factual information (and there is a great deal of testing with negative results in the hands of the chemical companies), there was an assumption that the materials 'must' be bad — no matter where or when they were used.

Third, beekeepers were great for starting something and not finishing it. After the April Fools Day meeting, a special account was established to handle contributions. During the next few months three different individuals handled the money, and then each became concerned about the tax liability associated with the cash (to open an account, they needed to give their social security number). So the money was passed around like a hot potato, and nobody would handle it. Also it always boiled down to a few tired, weary people trying to drag the load with them. A lot of well-intentioned people started United Concerned Beekeepers (U.C.Bees), and I was asked to run it. This worked well for about a year, and then the steam went out of the organization.

In spite of this, we did experience success and there were a few useful items which came out of all this. First, we learned that the press was very interested in honey bees, and especially dead bees. There was a great deal of press time given to dead and dying bees. I suspect that this is because the gypsy moth bothers people too, since we see much less coverage of bee kills when farm crops are affecting honey bees.

We produced a press packet and distributed it to about 200 radio and TV stations and newspapers in the southern New England area. Some of them used it, others filed it. I still get calls — five years later — from reporters who stumble across a press packet-release which has been filed since 1981.

Press packets are a cost-effective method of communicating with a lot of

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THE FINE ART OF KEEPING BEES IN A GENTLE WAY

By STEVE BURT • 19316 Brandt • Roseville, MI 48066

Whenever a beekeeper is introduced, it seems someone always inquires: "Gosh, don't you get bit a lot?" As any beekeeper knows, honey bees don't bite, although a few tropical non-stinging bees do. The significant issue is the perception of the non-beekeeping public that beekeeping and suffering have only too much in common. Of parallel concern is the belief that even living in the proximity of a beekeeper must be awfully dangerous. For beekeepers, these ideas are hazardous to their honey, or in the case of commercial operators, to their very livelihood.

Giving the devil his due, beekeeping (if the bees are neglected or abused) can be a nuisance to the neighbors or an agonizing experience for the apiarist. The intent of this paper is to suggest how to keep bee culture the positive experience it ought to be, through proper and wise handling of the bees. Needless to say, the focus shall be largely on the novice beekeeper and the beekeeper in an urban setting.

That element under the greatest control of the beekeeper is himself. A little common sense about when and if to proceed with necessary hive operations is the first line of defense for the beekeeper seeking a peaceful relationship with his bees. The beekeeper ought to pose himself two questions at any time when preparing to open a hive: (1) What are my exact intentions? and (2) Is this exercise necessary? Obviously, a beekeeper needs to think on his feet at times, such as if a hive is found to be diseased, queenless, or primed to swarm. Whatever the original plan, unforseen circumstances frequently necessitate working toward a changed, but thoroughly reasoned outcome. Opening honey bee colonies just because it is Tuesday is nonsense, and such constant disruption will surely lead to having lots of guard bees indiscriminately angry at the sight of humans. True, a beginner needs to open his colonies more than an experienced beekeeper just to discover about bees and gain skill in bee handling, but this is still purposeful behavior, not mere meddling!

Outside temperature is a crucial variable in bee temperament. Honey bee colonies are workable above about 70°F with superb conditions between eighty and ninety degrees. These numbers assume a sunny location and settled day. Any time the temperature is low enough to subdue bee flight and the propolis has tightened up the hive furniture, it is best to leave the hive tool and smoker safe in the shed. It can be surprising the difference even five minutes can make on a cool day, as the afternoon sun retreats or is replaced with overcast skies. Knowing when to quit is about the smartest thing a beekeeper can learn.

The bellows smoker is one of so many elements of beekeeping dating back to the late eighteenth century, the perfection credited to that great beekeeper, Moses Quinby (1870). Smokers are invaluable to the beekeeper in giving a reliable method of control of the very understandable instinct of the honey bee to protect its home, brood and larder. The smoker can be a fickle friend, however, given its tendancy to go out precisely when the colony temper starts to flare. Beekeepers love to debate smoker fuels, and sometimes even have contests to see who can make the most smoke. One recommendation would be to use punk (rotten, dry) wood, beginning with a small blaze of wadded newspaper and adding wood until the smoker is crammed with blazing fuel. By adding and pumping gradually, the smoker can be prepared within a few minutes and should last at least a half hour. The process is easily resumed if the smoker is refueled before going dead out.

Using the smoker requires the development of a sort of script. At the outset, a touch is shot at the entrance and any flight holes. The cover is pried up an inch and smoke is jetted in, with the cover lowered back down. Some seconds later, the cover is gently placed aside. The exact sequence is repeated as each item is removed, placing inner cover and any supers removed gently aside, always moving with a peculiar calmness that comes through practice. When examining the individual combs one might be advised to gently dust the top bars with a little smoke, while proceeding to lift out single combs with that almost Dracula-like gentle, slow, grasping touch as mentioned above. One may succeed in handling combs with little or no smoke, and will more often find the queen and undisturbed workers if the smoker is used lightly. Should the bees become a little feisty, the slightest well-directed puff or two will restore the peace.

The veil and protective clothing combine to protect the beekeeper, while minimizing those physical cues that anger bees. The veil protects the face from the bees and vice-versa. Eyes, lips, ears, nose and the hairline all are favorite places for an angry bee to attack, as if the bees instinctly realize that body openings are more disturbing sites to place a sting. Very frequently, the solitary bee pummelling the veil will fly on to other business after a moment, yet that same bee, successfully striking an unprotected face would probably attach herself and sting. To prevent even one sting in a lifetime square in the eye, the constant use of a bee veil whenever opening a colony seems justified.

The bee suit and gloves are marketed to protect the beekeeper. The suit, a white coverall, is not normally perceived by the honey bee as the surface of something appropriate to sting. Grey work coveralls are nearly as effective and much tougher, but an outraged bee will sometimes sting grey denim. Bee gloves are more of a nuisance than an asset. The thick skin of one's own fingers and hands is not recognized by calm honey bees as an enemy surface, provided all movements are deliberate and slow. Fingers do not crush bees or drop combs anywhere near as often as gloves. The gentle touch of a finger tip on a bee's thorax will actually prompt it to move away from the end bars as the frame is

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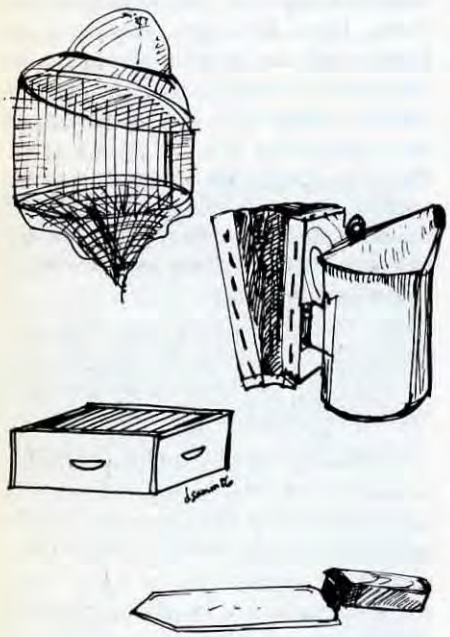
being lifted. At such times, numerous bees may be strolling about on the fingers and hands, and neither the bees nor their keeper is any the worse for the encounter.

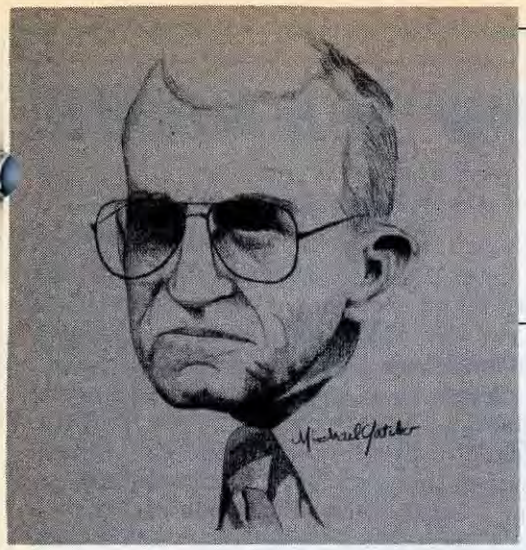
Races and strains of bees remain a fascinating subject for many beekeepers. While Italians, the familiar yellow bees, have become the prominent choice of the commercial operator, there remains a steady demand for alternative bees on the part of the hobbiest. The Caucasian bee, and its hybrid form the Dadant Midnite, are the most common alternate. This race is advertised as more gentle than the Italian, which it is in a sense. The Caucasian queen is quite difficult to distinguish from her worker daughters, unless one learns to distinguish her solely by her slightly larger size and by her glossy thorax, in contrast to the typically fuzzy back of the worker. The Italian queen has the same anatomical differences as the Caucasian, but her unbanded abdomen makes her quite easy



to distinguish from the clearly-banded workers. The CAucasian race uses vastly more propolis, making the frames much more thoroughly glued. Lastly, the Caucasians, in the writer's experience, are much more inclined to swarm than the Italians. These factors all make the Caucasian race more difficult to manage, and stings on the fingers are increased just from all the extra manual handling. Caucasian virgin queens will mate with the local drones, which creates hybrid colonies of variable quality, particularly in subsequent generations. One colony may outproduce either pure race, while another may be very temperamental to even approach. Italian queens selected for gentleness or annually requeened Caucasians would be a good choice if the beekeeper requires gentle bees. The writer has had bees of acceptable temper for many years, simply by breeding from those queens combining health, productivity, and good temper, promptly requeening any colony having a decidedly bad temperament.

Locating the apiary wisely is the best insurance for success the beekeeper can have. A location that conceals the bees from view is smart public relations. If the situation has fence or shrubbery barriers that lift bee flight, humans will have much less contact with your bees in adjacent yards. Place lots of water close to the apiary, or the bees will mill about dripping faucets, swimming pools, and kenneled animals — wherever water is free for the taking. It is easy to overstock an apiary, especially in a settled area. Other beekeepers will seldom be far away and hordes of bees on a neighbor's lawn or in the flower bed might prove frightening. In an urban setting, three or four colonies would be a reasonable number. In a rural or semi-rural situation, the available bee pasture and degree of operator interest would govern. Too many colonies become a chore, not a joy, and one's chores are too soon neglected.

The foregoing might suggest that one needs to worry constantly about having bees. This is not so, and was not the writer's intent. Bees are a joy to have, and are at all times fascinating. By developing one's skills and understandings about bee craft, the keeping of honey bee colonies is less a source of worry and more a source of pleasure and true diversion. The writer's colonies now average less than one sting per colony per year. Badly handled bees can average more stings per day. The difference is practice and developing a patient, even loving attitude toward that marvelous, sometimes inscrutable creature, the honey bee.□



WASHINGTON REVIEW:

THE SENATE DEBATE ON THE HONEY LOAN PROGRAM

by GLENN GIBSON
Minco, Oklahoma 73059

Six months have passed since the United States Senate voted overwhelmingly to discontinue the honey loan program. Sixty votes to terminate has given our opponents in Congress and the Administration a golden opportunity to continue their opposition and be ever alert for a chance to kill a program they feel is too expensive and benefits very few. Some have recently expressed their disappointment with the Agriculture Conference Committee for giving us a part in the farm bill.

What prompted 60 Senators to vote against us? Why did 36 Senators stay with us in face of a mountain of negative propaganda from the General Accounting Office (GAO) and the Department of Agriculture? Unfortunately, a lack of funds here prevents us from working up a report of this type that would answer these questions. However, we have a general idea about the voting pattern. ***The bulk of the favorable votes came from states where beekeepers had opened a meaningful line of communication and the Senator understood our problem.*** My own Senator, Don Nickles, was among the negative voters who had received a volume of mail. I am still working for his support with a steady stream of questions that he is hard-pressed to answer. We feel that the 60 negative votes came from Senators who ***hadn't been contacted or failed to understand*** their constituent beekeeper's story.

No discussion of the Senate vote would be complete without mentioning that Senators Boschwitz, Dole and Domenici changed their position and gave us strong support during conference deliberations. Now then — A question: How many of the opposing Senators would have changed their minds if the beekeepers had pressured the remaining 57 opponents with the same energy that was used in Kansas, Minnesota and New Mexico? Probably enough to give us a majority.

The Senate Debate

A record of the debate on the honey program appears in the ***Congressional Record*** dated November 21, 1985 in issue no. 161. This tells us a great deal about which Senator understands our problem. Opponents cited the outrageous cost of the program, pooh-poohed the value of honey bee pollination, refused to mention the import problem, and referred quite often to the GAO report. Proponents responded by calling attention to the import problem, importance of honey bee pollination and refuting the arguments of the opposition.

Senator Dan Quayle opened the debate implying that a number of beekeepers were millionaires:

> "We are not talking about the little guy in this case. We are talking about that $1 million in 1 year on providing bees to this country. You have a millionaire bees club around America."

Senator Rudy Boschwitz discussed the small number of 210,000 beekeepers using the program:

> "As my friend from Indiana has noted, there are about 210,000 maybe 250,000 beekeepers in this country — 3,000, 4,000, 5,000 of them are in the program. The program has some very, very large users. They are few to be sure. . . .This is a program which should be high on the list for discontinuance."

Senator Larry Pressler gave the longest speech in our behalf:

> "Let me say first that all beekeepers are not millionaires . . . the honey loan program not only assures a supply of honey, but, more importantly, provides the assurance that nearly 100 agricultural crops will be effectively pollinated. We can afford to import honey, but we cannot afford not to have pollination."
>
> "Honey bees also provide essential pollination services to hundreds of wild plants on which animal wildlife depends for food."
>
> ". . . if our beekeepers were treated fairly in terms of imports and exports, they would not need these types of programs."
>
> "The statement that a small percentage of beekeepers participate in the honey program is deceiving. When GAO determined 211,007 beekeepers were eligible for the program, they included all people who maintained a few beehives as a hobby.... including these people in the statistics would be like considering ***every American who has a garden eligible for farm program benefits.***"

Senator David Boren agreed with Pressler's remarks and made a few pertinent comments:

> "...I hope that if this amendment passes, we will be able to get the zoos of the country to have a few bees for display so that children in the future will have an opportunity to know about honey bees — because we probably will not have anymore if this amendment passes."
>
> "The reason for the problem is imports."

Senator Cochran spoke for us, but Senators Heinz, Helm and Chaffee opposed.

Can Our Program Be Killed?

Our honey program can be killed by Congress. A recent attempt to terminate surfaced in the House Budget Committee. Funding our program remains in

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this committee's report, but the recommendation to terminate remains. Congressional red flags like this can crop up from a number of sources in the form of negative insertions in the ***Congressional Record***, recommendations from several committees and introduction of bills on the floors. Also, the Administration can cause us all kinds of mischief and then we must not forget the Gramm-Rudman mess which includes mandatory cuts in the next 4 years. The industry cannot stand a precipitous drop of honey prices to the world level that would occur if the honey program was killed.

Action Needed

Letter-writing needs to be continued. If you don't write letters, then telephone or make personal calls when your legislator is home. Among other things, we need to clear up the pollination story and completely discredit the GAO report. Sending your congressman a copy of Dr. Marshall Levin's article that appeared in the May 1986 issue of the American Bee Journal will be a good start. Subject article entitled "Bees Do Pay Their Way" is a ringing indictment of the GAO report on the honey loan program. Please bear in mind that the contents of the GAO report will haunt us for years among congressmen who have not received any contact from back home. Also, the Administration will continue to use it as a basis for policy.

Beekeepers — we need your help!□

TIP OF THE MONTH

Supering

A few years ago, Dr. T. E. Rinderer of the U.S.D.A. Baton Rouge, Louisiana Bee Breeding Laboratory found that bees would produce more honey if you had more storage space available (supers) on the colony. Obviously a beekeeper could take this concept to an extreme, and there needs to be a compromise between what is practical and what is theoretically possible. No one wants to extract 10 supers that each have 15 pounds in them rather than 3 supers each with 40 pounds. The extra honey is just not worth the effort or the cost of the equipment. However, the concept is still valid, and that is that it is better to error on the side of having too much room rather than too little. There is one caution to this rule. Do not put too much foundation on a hive at one time. The bees sometimes tend to chew holes in it before they begin to draw out the comb.

When do bees need a new super? That is a question that beginning beekeepers often ask. My best rule is to watch the top bars of the super. When you begin to see white beeswax being deposited along the wood, then you need to add more room. You also need to consider the state of the honey flow when you do this. If it is near the end, then you should look at the super with a little more care to see if there might not be enough room and adding an extra super would be unwise.

Thanks To:
Roger Hoopingarner
Dept. of Entomology
E. Lansing, MI.

SOME THOUGHTS ON EXCLUDERS

By DR. ROGER A. MORSE
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I like to use queen excluders. All of my beekeeping life I've listened to arguments for and against their use. Those who don't like excluders say they reduce ventilation and that they tend to cause crowding and encourage congestion that can lead to swarming. Both of these thoughts are true to some extent but even with excluders, congestion can be controlled and swarming should not be a problem with proper management. There is no data to show that queen excluders reduce honey production and in the final analysis that is what is most important.

Excluders make harvesting the crop easier and that is the chief reason I prefer to use them. It is discouraging to find brood removed with the honey supers. When queen excluders are used one just doesn't worry about that.

Types of Queen Excluders

There are a great variety of queen excluders on the market. I prefer the perforated zinc excluders but they are not sold by all bee supply dealers. The perforated excluders are the cheapest and they have a long life if properly cared for. They are easy to clean, store, put into place and remove. I have heard it said that the ragged edges around the holes may cut and tear the wings of bees that pass through them. I've watched bees under a microscope as they moved through an excluder; they do so easily. I could see no evidence of damage to their wings. It is true that the edges around the perforations are rough when they are new but the bees chew these and in time they become smooth.

Queen excluders made of wires that are held in place by metal straps, molded metal bars, or that are welded in place are also available. I have no objection to any of these except insofar as their price is concerned. Such excluders are often bound in a wooden framework and this requires much more storage space. I am also not sold on the idea of using plastic excluders. I've seen many of these in use and they appear to work very well. One needs to be more careful when using a plastic excluder and I have no idea how long they will last. I fear, that like most plastic things, plastic queen excluders may have a short life.

When to Put Excluders on Colonies

Queen excluders should be on a colony for a minimum amount of time simply because they do crowd the bees and reduce ventilation as is mentioned above. Under the best conditions queen excluders would be put into place three and a half weeks before the crop is to be removed. Worker brood hatches in three weeks and drone brood in 24 days and if this minimum time is used all of the brood above the excluder should have emerged by the time the supers of honey are removed. If there is drone brood in combs above the excluder one should provide an upper entrance so that the drones may escape. Drones, like queens, cannot move through an excluder. I've seen dead drones so abundant on the top of an excluder where there was no upper entrance that they almost plugged it.

There is no data to show that queen excluders reduce honey production and in the final analysis that is what is most important.

The easiest way to put excluders on colonies is to first drive the bees do out of the supers, with a repellent. Only two repellents are approved for use in beekeeping, benzaldehyde and Bee-Go (butyric anhydride). Bee-Go is by far the most effective. Many people refuse to use Bee-Go because of its foul odor; it is objectionable when used in harvesting honey but when putting queen excluders into place it works much faster and outdoors the odor is not so offensive. No one has ever shown that it has an adverse effect on bees, including the queen. One can drive bees off brood with Bee-Go with ease but that is not so easily done with benzaldehyde. Often, when I've wanted to drive bees down into the bottom super, even when there are three or four supers above, I've done it easily and quickly with Bee-Go. If I am putting excluders in place in July, to harvest the early honey crop, I put the excluder above the first super. In the fall, since I winter colonies in two supers, I put the excluder above the second super; when this is done the bees will usually pack the second super with honey for winter.

Cleaning Excluders

Archie Coggshall, a commercial beekeeper in the Ithaca area, showed me the easiest way to clean queen excluders; he used only the perforated zinc excluders. The accumulation of materials on an excluder is such that they should be cleaned at least every other year and often every year. One should never try to clean an excluder with a knife or hive tool for fear of cutting or abraiding it and making a space that a queen might crawl through. When the excluders were removed Coggshall put them on top of the hive covers. The sun's heat would melt the wax and propolis and while the excluders might stick to the top of the cover, they are easily removed for storage at a later date. The wax and propolis that are left behind give the cover added protection in the same way that paint does.

I've placed queen excluders in solar wax extractors. This is an effective way of removing an accumulation of wax and propolis. Some beekeepers use steam for the same purpose.

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LESSONS TO BE LEARNED

By GEORGE COOMBES
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KOB IRO

One of my first actions after deciding to find some bees and reading Dr. Roger Morse's excellent guide for beginners was to write to the Provincial Apiarist requesting an inspector to check my five old boxes for signs of disease. I wrote twice and never received an answer and the inspector did not come. However I later learned that the government had transferred all their records to computer and, as invariably happens, all the old records were destroyed. I suppose my letters went the same way.

I finally loaded my five old boxes and drove to the inspector to have them checked for disease. He told me that he could see no sign of disease but that he would not use such old junk himself. He said that he never bought old equipment unless he had personally inspected it himself for several years previously. Like many budding enthusiasts I did not heed his advice.

The next response to my advertisement for honeybees came from a beekeeper at a considerable distance. He told me that he had just hived a swarm which I could have for twenty dollars. I was elated and drove there that very evening with an empty hive. He suggested that rather than disturbing the bees just before moving them, that I could have use of his box until the following spring, then transfer the bees when the box was lighter and return his equipment at my convenience. The hive seemed quite light but being still somewhat apprehensive about handling bees I accepted his kind offer, and came home with a colony of bees at last. I was so pleased with my purchase that I had only a vague idea that my action, as well as his, might be unlawful. My own qualms were not so much that I might be committing an offense punishable by a jail sentence, (when I arrived home instead of putting my prize on the front lawn, I hid it behind the barn) but I worried that Providence might be watching and would punish me in His own way. I only hoped that He was looking in the other direction for once.

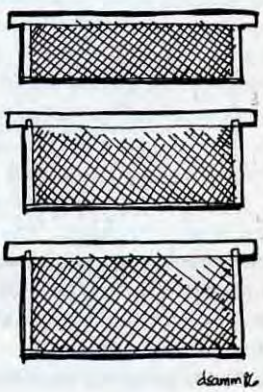
A few days later, ashamed that such wonderful creatures should be housed in such miserable equipment, I transferred the frames to my own box. There were eggs in the cells so I had a queen. I was relieved to return the old hive as soon as possible. The beekeeper was surprised that I would be back so soon.

Not wanting to disturb my bees in their new home I watched the entrances for hours and counted the seconds for ten bees to enter the hive on a warm day. I also recorded the proportion of bees that carried pollen. However my bees did not seem to be as active as those of my acquaintances. Soon as I approached the hive I noticed an odor of putrefication and began to read less about extracting honey and more about bee diseases. Finally I opened the hive and saw sealed brood with tiny holes in the cappings. The brood was dead and putrescent and was stringy when probed with a toothpick. The awful truth struck me that Providence had been watching me and the punishment He was dispensing was American Foulbrood and the loss of my precious bees. Worse to come.

I had read that the equipment had to be burned but what about the poor bees? I decided that the most humane method would be to asphyxiate the bees with carbon monoxide and then burn the equipment. Consequently I rigged a tube from the exhaust of my pickup to the hive entrance and turned on the motor and waited. I was very depressed as I listened to the bees buzzing within the hive and realized that I was not only losing my bees but that I was destroying God's creatures. The buzzing continued even after wax began to drip out of the bottom of the hive. Something was really wrong with my method. The bees were not being poisoned by the carbon monoxide but were dying from the heat of the exhaust. I turned off the motor, dug a hole in the ground, built a fire and one by one placed the frames on the fire until everything was consumed.

I now had no more bees, and one less hive box, and had run the risk that if the inspector had found the disease, and had also found disease in the hives of my neighbors, I would have found it difficult to explain to a judge why I should not be held responsible for my neighbor's losses, which in the case of a commercial producer could amount to thousands of dollars. It was an experience which I shall never forget.

I learned later that the beekeeper from whom I had purchased those bees had all his bees destroyed by an inspector that autumn.□



CONNOR . . . Continued from Page 352

people for very few dollars. UCBees paid me to produce the materials, but the cost of their production was much less than the cost of printing and mailing. I think the packets were helpful in turning public opinion to the beekeepers side. More important, it brought the insecticide applicators to the defensive — and they were more aware of the problems than they might have been in the past. So the effort was worthwhile.

Appearances at meetings were successful, with invitations to speak at the fruit grower and landscape meetings to describe the situation and discuss positive alternatives. Many applicators are remarkably well-informed about honey bees and how they may be injured. True to form, the growers which needed to hear the presentations were usually the ones who skipped the meeting, or were out in the hallway talking during the presentation. They, of course, already had the answers.

We were successful in obtaining cooperation of tree service applicators with a voluntary notification system. Anderson's office started publishing a list of registered beekeepers, and mailed this list to every fruit grower, vegetable grower, and tree service in the state. Many of the applicators took the time and effort to notify the beekeepers in their treatment areas that applications were expected to take place. This system was not perfect. It was voluntary, some applicants gave notice that they would be "spraying in your area during the next six weeks", and beekeepers, upon notification, were unprepared to protect their bees.

Appearances on radio talk shows were questionable. I participated in several, and I suspect that the good I did was cancelled by the confusion which sneaks into the typical call-in program. The reason is that too many people associate honey bees with wasps and yellow jackets, and you spend time talking about the wrong problem. The yellow jacket/wasp problem is a big one in the Eastern part of the United States, and it will require an organized public relations effort in the near future. I think that a one hour program where you get on, speak and get off, is better than the 2 or 3 hour talk show where people can get very strange.

Second, we learned who our friends were. We found that the county extension agents were ready and eager to help educate the beekeepers in the state as well as the pesticide applicators. We also found some environmental groups who were extremely helpful. A bee-insecticide task force was eventually formed comprised of beekeeping, university, regulatory and grower groups. This should have happened first, but it didn't. The task force was only formed after the matter had gone to the legislature, and was formed at the request of the regulations committee chairman, who was irritated that a compromise solution had not been sought earlier. A decided educational effort is planned as a result of this task force. Of course, that is what the beekeepers were trying to do in the press packets issued 5 years earlier. At least now, when pesticide applicators take a renewal test, questions on bee kills ***must*** be on the examination. It won't keep them from failing or passing on their own, but it adds a certain degree of awareness about bees for the applicators to consider.

These bees were not always dead, but were in the process of dying. They appeared paralyzed and would crawl weakly about.

Third, we learned that it is sometimes necessary to bite the bullet and spend money. The Connecticut beekeepers had no idea that we would be spending nearly $4000 to fight insecticides, but a lawyer was hired, and an effort was made to restrict two compounds (microencapsulated methyl parathion and carbaryl) from use at different times of the year. There was no success with the carbaryl, but Anderson's data showed a ***statistically significant difference with MMP*** — there, colonies which were exposed to the pesticide had a much greater probabililty of dying than when exposed to carbaryl or any other material. The regulatory effort took over two years to complete, after many meetings and public hearings.

The legal bill created enormous hardship on the Connecticut Beekeepers Association. Already tired of hearing about pesticides, members were asked to dig in deep for a massive fund raiser to pay back $3,000 in one year. For a club with only 200 members, this posed a hardship. The association worked hard to find money to pay the bills — from other clubs, from the ladies auxiliary, and from other sources. The bill was completely paid in April of this year. But when you continually ask people for money, participation in meetings decreases. Most hobby beekeepers only want to hear about dead bees for just so long!

In retrospect, the pressure on the state entomologist was probably a key in several ways. It resulted in the collection of data, and increased the level of communication between beekeeper and nonbeekeeper groups. Maybe Anderson wanted to prove wrong the beekeepers at the April Fools Day program. Instead, he showed that they were right.

Also during this time period, Anderson shifted his recommendation for the state's preference in compound for control of gypsy moths. On-going research into an effective control led to the recommendation that ***Bacillus thuringensis*** - B.t., be applied whenever and wherever possible. Now some of the tree sprayers are offering their customers a choice of control agents. Since B.t. is harmless to both bees and humans, it is a logical alternative. It is, unfortunately, trickier to apply and does not have an immediate knock-down of caterpillars.

The gypsy moth caterpillars are back in Connecticut this year, in the southeastern region. We will again see attention drawn to bee kills if carbaryl is applied in this area for control. But if the problems are minimal, then perhaps a loyal group of Connecticut beekeepers who helped support this tedious effort can take a moment to reflect on the success they have seen. And keep on working on the educational effort.□

TABER . . . Continued from Page 348

TABLE I — GROUP III
— Herbicides, Defoliants and Desiccants

Fungicides (trade and/or common name)

Balan® , benefin
Banvel® , dicamba
Basagran® , bentazon
Basalin® , fluchloralin
Betanal® , phenmedipham
Betanex® , desmedipham
Bladex® , cyanazine
Blazer® , acifluorfen
butachlor
butam
cacodylic acid
Cambilene® , 2,3,6-TBA
Caparol® , prometryn
Casoron® , dichlobenil
Chloro IPC® , chlorpropham
Cotoran® , fluometuron
2,4-D
DEF®
Desiccant L-10® , arsenic acid
Devrinol® , napromamide
dichlorprop, 2,4-DP
dinoseb, dinitrobutylphenol
diquat
Dual® , metolachlor
endothall, sodium salt, Accelerate®
Eptam® , EPTC
Eradicane® , EPTC + safener
Evik® , ametryn
Evital® , norflurazon
Folex® , merphos
Garlon® , triclopyr
Goal® , oxyfluorfen
Hoelon® , diclofop-methyl
Hydrothol 191® , endothall monopotassium salt
Hyvar® , bromacil
Igran® , terbutryn
IPC® , propham
Karmex® , diuron
Kerb® , pronamide
Lasso® , alachlor
Lorox® , linuron
Maloran® , chlorbromuron
MCPA
Methar® , DSMA
Milograd® , propazine
Modown® , bifenox
MSMA
Mylone® , dazomet
Nortron® , ethofumesate
Paarlan® , isopropalin
paraquat
Planavin® , nitralin
Pramitol® , prometon
Preforan® , fluorodifen
Princep® , simazine
Probe® , methazole
Prowl® , pendimethalin
Ramrod® , propachlor
Randox® , CDAA
Ronstar® , oxydiazon
Roundup® , glyphosate
Sancap® , dipropetryn
Sencor® , metribuzin
silvex, 2,4,5-TP
Sinbar® , terbacil
Smite® , sodium azide
Surflan® , oryzalin
Sutan® +, butylate
2,4,5,-T
Telvar® , monuron
Tenoran® , chloroxuron
TOK® , nitrofen
Tolban® , profluralin
Tordon® , picloram
Treflan® , trifluralin
Turf Herbicide® , endothall, disodium
Vegadex® , CDEC
Zorial® , norflurazon

Nematicides and Miscellaneous (trade and/or common name)

endothall
Exhalt® 800
gibberellic acid
Mocap® , ethoprop
Mylone® , dazomet
N-Serve® , nitrapyrin
Polaris® , glyphosine
Smite® , sodium azide
Sustar®

SPIELHOLZ . . . Continued from Page 340

The chimney can be constructed while everything else is burning in the pit. First lay down the bottom board as usual and then stack supers so that the bottom one is facing in a normal rightside-up direction. Then add the subsequent ones upside-down so the rabbits are facing downward toward the fire. Five supers should be the maximum number in a chimney since the efficiency of the fire diminishes as the stack gets higher and it will also be more difficult to control the flames and not lose all the equipment. The long handled shovel comes in handy again in this process. The shovel is wedged between the bottom board and bottom super and is used to control the amount of air entering from the bottom. Once the supers have burned long enough, pull out the shovel. Approach the stack carefully (keeping an eye on those flames!) and quickly toss on the cover, smothering the fire. An alternate method needs more room but works as well. The shovel is pulled from the stack, and then used to topple over the chimney.* The quick motion of the supers hitting the ground blows out the flames. When all has cooled down, check the supers for an evenly scorched surface, paying ***special*** attention to the crevices and along the rabbits.

*(Editor's Note: Extreme caution should be exercised to avoid grass fires in dry areas using this technique.)

Leaving the Site

Last but not least, the ashes of the frames, honey, bees and other AFB contaminated materials are covered up with the dirt. The area should now be left undisturbed. In conclusion, I want to stress the importance of this lengthy and perhaps difficult procedure in containing the spread of beekeeping's public enemy #1, American Foulbrood. AFB is a virulent, highly contagious disease that requires that we beekeepers police ourselves. We know the value of healthy bees in pollination and honey production, so by containing AFB, we look out for our neighbors as well as ourselves.

— I would like to thank Robert Mnugari of New York State Ag and Markets and Dr. Roger Morse of Cornell for their advice and review of this manuscript.

— Joan Spielholz is a graduate student in Apiculture at Cornell University, Ithica, New York.□

★Past Perfect★ The Reader's Choice

Just about everybody has had that 'Best article I've ever read' feeling some time in their life. You remember, the one that opened up a whole new way of looking at things, or the one that improved the way you do something for the rest of your life.

Sometimes these articles aren't at all related to what you do, but gave you some insight into a way of life you didn't know existed. The one that changed me was an article by an English writer named Mary Percivel. It was about floral biology and pollination, undoubtedly two of my favorite passions in life since.

In the short time I've been here, I've become aware that many people have had that same experience with articles from Gleanings — some technique they learned that turned around their beekeeping skills, or even a story that caused them to look at things just a little differently.

These are the classics; the unrewarded Pulitzer Prize winners of beekeeping literature. I would like to know of these articles because if they helped you they would be worthy of repeating. Certainly not every article is a classic, and not every story is worthy of repeating. But there must be a few, those special few, that should go into Gleaning's Hall of Fame.

Send me a letter or a postcard, and let me know of that special article or story. Tell how it changed your life or why it is the 'Best you ever read'. Keep it brief, and please be specific about year and month if possible. There are a lot of years to look through if you don't remember and unfortunately my time is limited. But if it was good enough to remember, it's probably easy for you to find.

We will publish these 'Classics' over the next several months. This isn't a contest, but those with the most admirers will certainly receive priority.

So that I can keep them separate, send your suggestions to:

Kim Flottum, Editor
Best Article
P.O. Box 706
Medina, Ohio 44258

Answers To Testing Your Beekeeping Knowledge

1. ***True*** Honey bees in the summer are physiologically different than those found in the hive during the winter. During the summer, hypopharyngeal glands change rapidly in size as the honey bee ages. The glands shrink after the worker switches from nursing activities to foraging in the field. In the winter, all bees have large hypopharyngeal glands.
2. ***False*** Juvenile hormone is produced in the corpora allata.
3. ***False*** Both the corpora allata and corpora cardiaca are found in adult and larval honey bees. The prothoracic gland is found only in the larva. The gland produces ecdysone, the hormone involved in molting.
4. ***False*** Production of the Nassanoff pheromone varies with the age of the honey bee and with time of year. Newly emerged workers have little or no secretion in their glands, but production increases rapidly during the next four weeks reaching a maximum when workers are foraging.
5. ***True*** Not only does a mature queen produce queen substance that inhibits the rearing of new queens, immature queens in sealed cells will also depress the production of additional queen cells.
6. ***True*** Tiny glands found on the upper surface of the queen's abdomen secrete a pheromone that interacts with the mandibular glands to attract workers who feed and tend to the queen. The abdominal glands are active only on direct contact and serve to keep the attendant bees, the "court" around the queen.
7. E) hypopharyngeal or brood-food glands
8. A) 8 wax glands
9. C) Nassanoff gland
10. The Nassanoff pheromone is released outside of the broodnest for the purpose of attracting other workers. It is used to communicate the discovery of something sought, coordinate swarm movement, attract lost bees to a nest entrance and guide recruited foragers to a food source.

    A) foraging for water

    B) upon finding their nest entrance

    C) coordinating swarm movement and maintaining swarm cohesion

    D) scouts mark potential nest sites

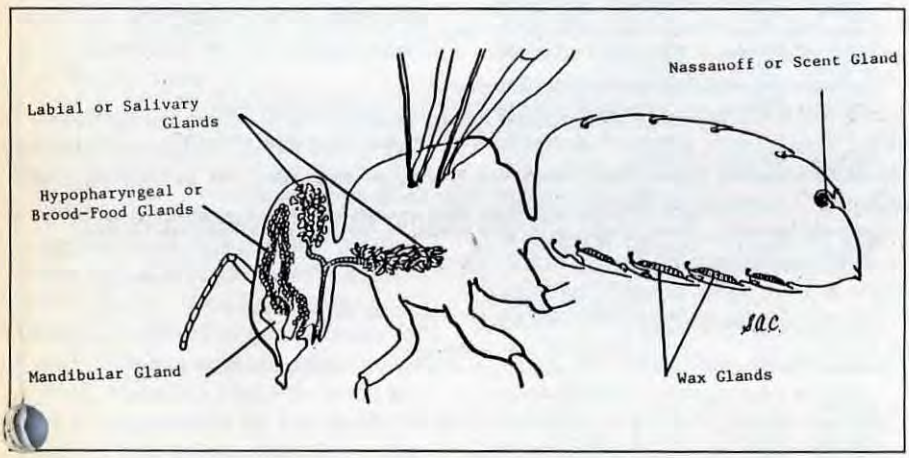
    E) upon finding their queen who they lost contact with momentarily

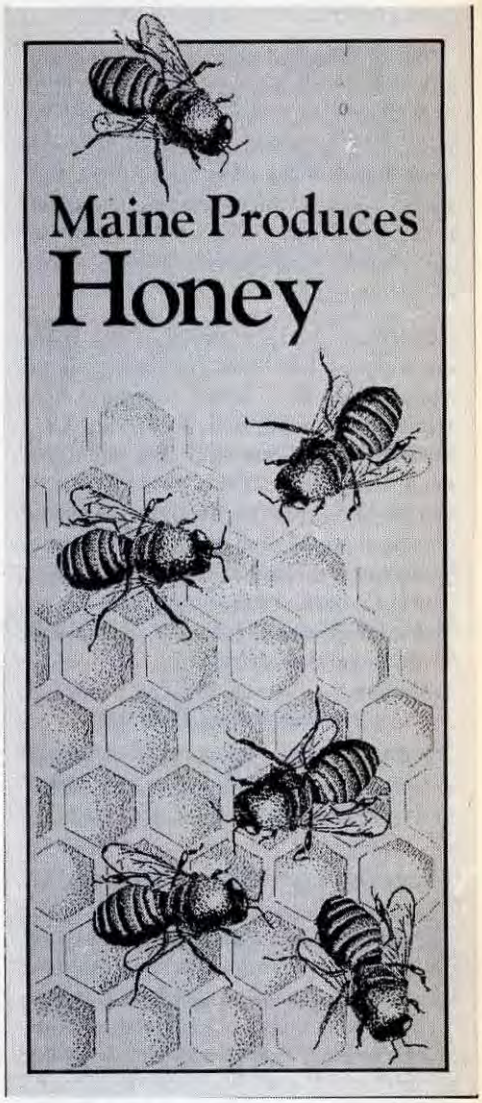
    F) upon finding a rich source of artificial food (dish of sugar syrup), rarely released at flowers
11. Saliva is used to:

    A) dissolve or dilute sugary foods (dry sugar or granulated honey)

    B) clean surfaces (brood cells or the body of the queen)

    C) moisten substances being chewed
12. See diagram that follows:





There were a possible 20 points in the test today. Check the table below to determine how well you did. If you scored less than 12 points, do not be discouraged. Keep reading and studying — you will do better in the future.

Number of Points Correct

20 - 18 Excellent
17 - 15 Good
14 - 12 Fair

EAS . . . Continued from Page 332

chance to sharpen your beekeeping management and inspection skills.

The Wednesday short course program is centered on aspects of honey. This "world of honey" day will look at aspects of efficiently producing extracted and comb honey, marketing the product and other ways of increasing sales from honey. This short course is a must for the sideliner who wants to increase their profit margin.

As usual the instructors of the EAS short course will be top-notch people in Apiculture. ***Dr. Larry Connor*** has organized the course and ***Clarence Collison, Bob Berthold*** and ***Jim Tew*** are some of the instructors joining Larry. Registration for the short course is separate from EAS and this year is $30/day or $55 for both days. Contact Dr. Larry Connor, Beekeeping Education Service, P.O. Box 817, Chesire, CT 06410 for short course details.

Master Beekeeper Program

The Master Beekeeper is an individual with beekeeping experience who possesses a detailed knowledge of honey bee biology. EAS has conducted a testing and certification program of Master Beekeepers since 1979. Dr. ***Clarence Collison*** with a host of Master Beekeepers gives annual lab, knowledge and apiary expertise examinations at each EAS meeting. If interested you should contact EAS Secretary Loretta Surprenant (The Miner Institute, Chazy, NY 12921) or Dr. Collison at Penn State University for an information packet and application. The tests are rigorous and only a few individuals become certified each year in keeping with the purpose to be certain that only ***accomplished*** Master beekeepers are recognized.

Vacation in Delaware

Delaware is the nation's 2nd smallest state but that doesn't mean there isn't lots to see and do. We have a lovely barrier island, coastline, and a large portion unspoiled as Delaware Seashore State Park. Our other parks are lovely and varied with lots to see and do too.

The ***ladies*** will have an opportunity to tour Winterthur, a former DuPont residence and spouse's or others can go along on Thursday afternoon. The buildings and grounds are beautiful and the interior tours are small and intimate. It is well worth the trip. Longwood Gardens is convenient in nearby Kennett Square, Pennsylvania. It takes at least a day to see the gardens. Plan to go Saturday after EAS or better still go Tuesday or Wednesday before EAS gets in full swing. You can check into Christiana Towers early to take in this special opportunity. It is recommended for young and old alike.

For More Information

There is much more to see and do in Delaware this summer. If you want information or brochures contact the State Tourism Office toll free 1-800-441-8846. They will be glad to send you the information you need. For a registration form and details on EAS-86 contact Dr. Dewey Caron, Dept. of Entomology, University of Delaware, Newark, DE 19717-1303.□

Preliminary Program for EAS '86 Meeting
32nd Annual EAS Conference — August 6-9, 1986
University of Delaware, Newark, Delaware

	Tuesday, August 5, 1986
9:00a.m. - 5:00p.m.	Short Course, Room 125, Clayton Hall
	Wednesday, August 6
8:30a.m. - 4:00p.m.	Beekeeping Short Course — Room 125, Clayton Hall
10:00a.m. - 10:00p.m.	Conference Registration Desk Open, Clayton Hall
1:30p.m. - 4:00p.m.	Master Beekeeper Written Lab Exam, Dr. Clarence Collison
1:00p.m. -	Commercial Exhibits Open, Room 101, Clayton Hall
1:30p.m. - 5:00p.m.	Registration for Honey, Gadget, Wax, Cooking & Photo Shows
5:00p.m. - 6:30p.m.	Dinner, Pencader Cafeteria
7:30p.m. - 10:00p.m.	Bee movies and Social
7:00p.m. - 8:30p.m.	Delegates Mtg., Dr. Dewey Caron, Rm. 110, Clayton Hall
8:30p.m.	Directors Meeting, Bob Cole, Room 110, Clayton Hall
	Thursday, August 7
	Program of the Day, Dr. Dewey Caron
7:00a.m. - 8:30a.m.	Breakfast
8:30a.m. - 10:30a.m.	Registration for all Shows, Room 120, Clayton Hall
9:00a.m.	Presidents Call to Order, Auditorium, Clayton Hall
9:10a.m. - 9:25a.m.	Invocation, Remarks, Opening Remarks
9:35a.m. - 10:15a.m.	Swarm Orientation in Honey Bee, Dr. Roger Morse, Cornell University
10:15a.m. - 10:30a.m.	Break
10:30a.m. - 11:15a.m.	World of the Honey Bee, Brian Sheriff
11:15a.m. - 12:00noon	Honey Bees Photography, Steve McDaniel, Baltimore, MD.
12:00noon - 1:15p.m.	Lunch
12:15p.m.	Ladies Luncheon and Tour
1:30p.m. - 2:10p.m.	NOSEMA Workshop, Dr. John VandenBerg, USDA, Beltsville, MD.
	Swarming - Management for control, Herman Werner, Wilmington, DE. Hive Products - cosmetics, Connie Krochmal, Asheville, N.C.
2:20p.m. - 3:00p.m.	Bee Beard Contest, Robert Harvey
	Hive Products - Wax Ornaments, Roger Hultgren, Holden, MA
	Display presentation - selected program speakers
3:00p.m.	Break
3:30p.m. - 4:15p.m.	NOSEMA Workshop, Dr. John VandenBerg, USDA, Beltsville, MD. Cooking with Honey, Ann Harmon, Laytonsville, MD.
	Hive Products - Bavarian Wax, Jim Rady, Anderson, IN.
4:00p.m.	Professional Apiculturists Meeting, Dr. Robert Berthold (Open to Everyone), Room 110, Clayton Hall
6:00p.m. - 7:30p.m.	Barbeque in grove
8:00p.m.	Dancing and Social with DJ, Clayton Hall Lobby
	Friday, August 8
	Program Chairman of the Day, Robert MacIntire
7:15a.m. - 8:30a.m.	Breakfast
9:00a.m.	President's Call to Order, Auditorium
9:05a.m. - 9:35a.m.	To be Announced
9:35a.m. - 10:05a.m.	Honey Bees and Acid Rain, Dr. Matt Scott, Maine Dept. of Agriculture
10:05a.m. - 10:20a.m.	Break
10:20a.m. - 11:00a.m.	Varroa and Acarapis mites, Dr. D. Mike Burgett, Oregon State University
11:00a.m. - 11:30a.m.	A glimpse of beekeeping in China, Dr. Paul Schaefer, USDA, Newark, DE.
11:30a.m. - 12:00noon	Pollination: The Real Cost to Beekeepers, Dr. John Ambrose, NC State University
12:00noon - 1:15p.m.	Lunch
1:30p.m. - 2:30p.m.	EAS Business Meeting, Auditorium
2:45p.m. - 3:30p.m.	Apiotherapy Workshop & Discussion, Charles Mraz, Middlebury, VT.
	Hive Products - Bavarian Wax, Jim Redy, IN.
	Swarm - management for control, Herman Werner, Wilmington, DE.
3:30p.m. - 4:00p.m.	Break
4:00p.m. - 5:00p.m.	Honey Tasting Contest, Ann Harmon, Laytonsville, MD.
	Hive Products - cosmetics, Connie Krochmal, Asheville, NC.
	Hive Products - Wax, Roger Hultgren, Holden, MA.
4:30p.m. - 5:00p.m.	Master Beekeeping Critique Session, Dr. Clarence Collison, Penn State University
6:00p.m. - 7:00p.m.	Cash Bar, Clayton Hall Lobby
7:00p.m. - 10:00p.m.	Awards Banquet, Clayton Hall Banquet Room
	Saturday, August 9
	Program Chairman of the Day, Frank Fulgham
7:15a.m. - 8:30a.m.	Breakfast
9:00a.m.	President's Call to Order, Auditorium
9:05a.m. - 10:15a.m.	Apis florea, Bee Mites and Beekeeping in the Middle East, Dr. Massadegh, N.C. State University
10:15a.m.	Break
10:30a.m. - 11:15a.m.	James I. Hambleton Award Recipient (Lecture)
11:15a.m. - 11:45a.m.	To be Announced
11:45a.m. - 12:00noon	EAS - Next Conference - VPI
12:15p.m.	Lunch
1:30p.m. - 2:30p.m.	Final Check Out of Rooms

MAILBOX . . . Continued from Page 329
Hills area is really a science fiction story. The truth sometimes hurts but has to be dealt with. This is just the [illegible] of several ferral swarms that exist in the USA now as a result of the several unintentional and intentional importations of the AHB into the USA that this author knows of during the past 25 years.

Results: Over one million taxpayers dollars in effect were washed down the drain due to the improper investigations of available past history of the area. It is odd that the USDA years ago caused problems in the beekeeping industry and now again the States, USDA/ARS, and the UDSA/APHIS are putting the screws to innocent segments of the bee industry.

David Miksa
Commercial Beekeeper
Formerly, USDA/ARS

Dear Editor:

Should the common name for ***Apis mellifera*** be spelled honeybee, honey-bee or honey bee? All three spellings can be found in the literature. Gleanings in Bee Culture, American Bee Journal, and The Journal of [illegible]icultural Research all spell it as one word, honeybee. My second edition of Webster's New Collegiate Dictionary does the same. This dictionary also makes one word of the following: housefly, horsefly, dragonfly and butterfly. The first two are flies, but the last two are not. Carpet beetle and dung beetle, both true beetles, and some others, are spelled as two words in Webster's. This seems inconsistent to one who likes things to be orderly. I have never seen an explanation as to why these spellings are different and would be pleased to hear from a reader who has further information.

Spelling the word "honey-bee" occurs infrequently. I think this was more popular in the past than today.

The Entomological Society of America faced this problem several years ago and came up with a position I like. A committee exists to designate official common names for insects. Their underlying idea is that a good, standard, common name is [illegible]t as appropriate as a scientific name, if it is used consistently. The only reason we have scientific names is so that people everywhere in this world will know what species is being discussed when the scientific name is used. There are at least one million species of insects on earth, and some kind of system is needed if we are to know what insect another person is talking or writing about. We could use common names for all of these animals just as easily as scientific names if everyone were consistent. Interestingly, the Russians, Chinese, Japanese, and many others with an alphabet different from our own, have all adopted the system of scientific names that we use. The reason is simply that they too find the naming of animals complex.

The Entomological Society rule says that if an insect is what the name says it is then two words should be used. House flies, horse flies, stable flies and face flies are all true flies in that they have one pair of wings and belong to the same group of insects, the Diptera. On the other hand, the Society says that butterfly should be spelled as one word since it is not a true fly; it has two pair of wings and belongs to the group called the Lepidoptera, which includes the butterflies, moths and skippers. Dragonfly is one word, too, since these insects, (sometimes called darning needles for reasons that were never clear to me) are not flies either but are in yet another group of insects.

If one follows these rules then the following spellings are correct: bumble bee, sweat bee, leaf-cutter bee and honey bee. These are all true bees in that they are insects that feed exclusively on pollen and nectar and that somewhere on their body one will find branched hairs. The branched hairs, sometimes called plumose hairs, serve the bees and the flowers they visit very well; pollen is caught in them easily and may be thus transferred from one flower to another. From an evolutionary point of view, honeybees exist because of their value as pollinators. The bodies of honeybees, and most other bees, are covered with these branched hairs and this, in large part, is what makes them such good pollinators.

I'm sure that many people consider writing about things such as this humbug. I do not. I feel it is important that we be a bit fussy about spelling so that we all understand exactly what the other person is writing and thinking.

Roger A. Morse
Department of Entomology
Cornell University
Ithaca, NY 14850

EDITOR'S NOTE: Having a strong background in Entomology I have the same opinions you do regarding the spelling of the word honey bee. However, for many years, GLEANINGS IN BEE CULTURE has used Webster's Dictionary as its standard. Webster's, for reasons I'll explain, spells it as one word — honeybee. They call it solid.

I investigated their reasoning by contacting the Editor of the most recent edition and asked why. The following is the statement he gave.

Webster's considers the spelling of a word as it is used ***most commonly*** in the U.S. at the time of publication. The sources for this particular word were; ***Blair and Ketchums Country Journal, Changing Times*** and ***Nature.*** Of these, ***Blair and Ketchums*** and ***Changing Times*** used it as solid and ***Nature*** as open — 2 out of 3 solid. The majority wins and honeybee is one word.

Further investigation showed that in the past they had reviewed seven other journals and magazines with the following results — 5 open and 2 closed. This total then is 7 open and 4 closed. He went on to say that in the New Unabridged edition both spellings would be acceptable.

Dear Editor:

The Bee Specialist in your April issue discussed wire push-in cages and the problem of sometimes finding yourself with Erica the Half-a-Queen! One type of push-in is high enough for a mailing cage to fit under it. Attendants are removed, the cork at the non-candy end removed and the queen held in until the wire cage is placed over and pushed into the comb. More space is required with this type, between frames. The queen comes out at her leisure to join the emerging workers under the wire.

Another method uses a fifteen or thirty pound honey bucket (empty), white styrofoam, another bucket with an inch of water in the bottom, a

Continued on Next Page

MAILBOX . . . Continued from Page 365

lamp with a 60 Watt red light bulb and a pitch-black closet or room. The beekeeper enters the room lit only by the red light which is black to the bees. Each mailing cage in turn, has one staple removed from the screen in order to fold the screen back and dump the queen and attendants onto the bottom of the empty bucket. The queen is then lifted by both sets of wings onto the styrofoam. A wire cage is placed over her and pushed slightly into the styrofoam. The attendants are dumped into the bucket with water and the procedure repeated until all queens are under the push-in cages. (If needed, the queens can also be marked and/or clipped at this stage.)

If it is desired not to touch the queen, the wire cage is simply placed over the queen on the bottom of the bucket. When she climbs onto the wires it is transferred and pushed into the styrofoam. The difference in the red light is that the bees usually don't run around or fly, they stroll or stay still and it is a less frantic method to effect transfer.

The sheets of styrofoam can be whatever size is handy, allowing 2, 4, 10 or whatever number of queens per sheet. A small drop of honey on each wire cage keeps the queens placated until they are in their new home which should be as soon as possible. Also it is better to keep the sheets covered with a towel or somehow out of the light.

At the bee-yard, whatever cage happens to have the queen crawling on the wires, is transferred from styrofoam to appropriate brood comb. This is the stage where the queen could get away but if one is careful it is a very low risk. Have the selected comb close to the cages on the styrofoam, fold back the towel and select the cage which at that moment has the queen crawling on it.

All the above assumes that the cages are made from 8 strands to the inch galvanized hardware cloth (seive wire) and that the cut edge is cut so that "teeth" are left sticking out past the last cross wire. These teeth are what push into and hold in the styrofoam and yet are stiff enough to push into a dark brood comb. Blue styro does not hold as well as the cheaper white.

Another topic in the same issue. Roger Morse states that Argentine beekeepers do not treat bees for the tracheal mite nor is there much concern about it.

A few lines later he mentions that they must treat their colonies twice a year for Varroa. If the Varroa and Tracheal mites are in the same hives, wouldn't the varroa treatment also be controlling the tracheal mites, especially since varroa is so widespread down there? Clarification is hereby requested.

Larry Cosgrave
181 North River Rd.
Charlottetown, P.E.I. C1A 3L2

Dear Editor:

Editor's Note: The following commentary was voiced by J. Peter Grace on 'The Nightly Business Report', a news show on PBS. Although somewhat dated (it appeared in Mid-April) the content is a fairly widespread belief held by the public, the media and Congress. *I welcome rebuttals to this commentary.* Some will be published and *all* will be forwarded to Mr. J. Peter Grace.

Thanks to Mr. John Richard Davis of Greensboro, NC. for taking the time and effort to secure this for us.

In tonight's commentary, Industrialist J. Peter Grace gives Congress a starting point in its efforts to reduce wasteful government spending.

MR. GRACE: How sweet it is for beekeepers, that is. Here are some facts of life about honey price supports, one of the sweetest subsidies in the current farmbelt, but a sticky problem for taxpayers. As in other federal commodity programs, the government sets a target price for honey and loans this amount to beekeepers using the honey as collateral. If the beekeeper can't find a private buyer willing to pay the target price, then the government buys the honey, keeps the honey, and the keeper forgets about repaying the loan. Since the Agriculture Department's target price has been running 60 percent above the market price for honey, there's been a flood of it flowing into government warehouses, 5 million pounds in 1980, swelling to 119 million pounds in 1984, 72 percent of all the honey produced in the United States. the government gives away all this expensive honey for free. Meanwhile, cheap honey imports more than doubled from 49 million pounds in 1980 to 129 million pounds in 1984. The sickening annual cost of this program has been over $100 million for the past two years. In 1984, the honey the government gave away was worth more than all the honey sold commercially in the United States. This program benefits fewer than 3,000 beekeepers at an average cost of over $33,000 each, and there's no limit to this either. One producer in North Dakota collected a million and a half dollars from the program in just one year. I don't want to unnecessarily single out beekeepers, but it illustrates how a select special interest benefits while you as a taxpayer foots the bill. To those in Washington who say they can find no way to reduce fat in the federal budget, I suggest one good way is to start cutting out sweets like this. This is J. Peter Grace.

Dear Editor:

The following appeared in the May 8, 1986 New York Times:

The White House has all kinds of contingency plans for sudden developments in a complex world, but the architects of changing events were at a loss when a swarm of bees invaded the South Lawn. How do you handle 20,000 angry bees? The answer, of course, is gingerly, but no one seemed to know just who was supposed to do the handling.

Phone calls to the Interior Department and the Agriculture Department proved fruitless, and finally someone dialed 911, the emergency police number.

Although the District of Columbia Police Department does not have a bee squad, it does, by coincidence, have a topnotch beekeeper on the force, Officer Tom Abernethy, an electronics technician who in his spare time helps watch over a

Continued on Page 372

Inner Cover . . . Continued from Page 323

Philosophy, beekeeper and author of some renown. We were in Richards neighborhood recently and were invited to spend a couple of hours to visit and meet his family.

During our visit I had the chance to quickly peruse his library of books on bees and beekeeping and look at several of the antiques and other rare apicultural items he has. I also had a chance to meet his wife, Kim, and his 3 ½ month old son, Aristotle Eli Fontana-Taylor. Although I was only able to chat with Kim briefly, she left you with a feeling of welcome one seldom finds. Aristotle is a charmer, doing all the right things for one his size.

Of course, chatting with Richard Taylor is very much like reading his column. The only difference is that you have the opportunity to interrupt if you're unclear on some point. It's also a two way street and he asks as many questions as he answers. The 2 hours passed far too quickly and suddenly it was time to go. I was only able to cover half the ground I wanted. I would compare the time spent to that enjoyed savoring a fine wine — mellow, and not nearly enough.

•

We certainly would be remiss if July 4th wasn't mentioned somewhere in this issue. Being Editor of a magazine in many places in the world can be a dangerous job. If you are not a rubber stamp for your government's policies regarding the press your life expectancy can be measured in days. We continuously criticize Washington for the less than efficient work done there, but the fact that we have that privilege is often overlooked. So if you want to swear at some bureaucrat on the Fourth, do it out loud and savor the opportunity. It's a sound ***not*** heard 'round the world.□

FOR THE RECORD

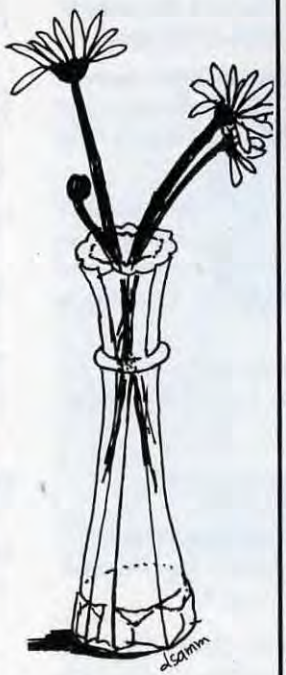
Gleanings continually seeks accuracy in our publication. We recognize that errors do occur and use this space to correct them when discovered by staff or readers. Mistakes may occur in writing, editing or mechanical reproduction of the magazine. It is our policy to correct these mistakes. We encourage questions or comments from readers. Call (216) 725-6677 during business hours or write us at the address on the inside cover.

Occasionally we send out resubscription letters to readers who have already resubscribed. This happens for several reasons (i.e., letters crossed in the mail, computer back-log, etc.). If this happens to you, ***please*** disregard our notice. With an operation as large as ours these delays will happen — the fault is ours and not yours. We almost always get resubscriptions entered and there is no lapse in delivery.

LATE NOTICE

★ ***SOUTH CAROLINA*** ★

The South Carolina Beekeepers Association will hold its Annual Summer Meeting July 17-20 at Clemson University in Newman Hall Food Industries Auditorium. Speakers include Dr. David Fletcher, University of GA, and Steve Taber.



News & Events

★ *NEWS RELEASE* ★

Taber Apiaries Changes Ownership

Steve Taber has started a new business, HONEY BEE GENETICS, and will be producing Superior Breeder Queens through Artificial Insemination techniques. He also will offer Artificial Insemination services, equipment and consulting.

Mr. Bob Zenisek has taken over Steve's operation and will continue providing the same services and stock as Taber Apiaries has.

★ *ALABAMA* ★

On July 26, 1986, at 10 a.m. the Madison County Beekeepers Association will hold their Annual Field Day. The meeting will be held at Monte Sano State Park Pavilion. Invited speakers include: Guy W. Carr, AL Dept. of Ag. and Industries; Tom Hart, TN State Apiarist; Dr. J.A. Black; Albert McDonald, Comm. of Agriculture and Ms. Linda Thorton, Extension Office. A Bar-B-Que Chicken Plate will be available for only $3.00. For more information contact Tom Lundy, (205) 883-1509.

1986 Annual State Beekeepers Assn. Convention

The 1986 Annual Convention of the Alabama State Beekeepers Association is sponsored this year by the Beekeepers Associations of Mobile and Baldwin Counties, and will be held Friday and Saturday, August 1st and 2nd at:

Riverview Plaza Hotel
64 So. Water St.
Mobile, AL 36602
Ph. (205) 438-4000

Rooms are $50.00 per night for you and up to three additional persons in your party. Bring the family.

For more information and advance registration fees of $35.00 mail to or contact:

Bill Wiesand, Secty
Mobile County Beekeepers Assn.
8101 Quimby Dr.
Mobile, AL 36619
Ph. (205) 661-0842

Late registration fees of $40.00 may be made between 8:00 and 10:00 a.m. at the Hotel on Friday, August 1st.

All Southeastern Beekeepers are invited to attend this entertaining and informative get-together.

★ *ALBERTA* ★

Beekeeper Technician Program Offered

Fairview College, in Alberta, Canada, offers one of the world's most unique opportunities to study beekeeping.

The Beekeeper Technician Program starts in January and runs for eleven months. The course is designed to train people to work with commercial beekeeping operations and prepare for careers as independent beekeepers.

The course is offered in three sessions. Session 1: theory of apiculture and honey production, including a one-month field trip to California.

Session 2: work with the College's 300-hive apiary or established beekeepers. Session 3: learn business and management aspects of running a beekeeping operation.

For more information write to: Registrar, Box 3000, Fairview, Alberta, Canada TOH 1LO.

★ *CONNECTICUT* ★

Western Connecticut Beekeepers Association Third Annual Bee Bonanza Set for July 13

The third annual Bee Bonanza will be held Sunday, July 13 from 11 a.m. to 5 p.m. at the Fairfield County Extension Center on Route 6 in Bethel, Connecticut.

The Western Connecticut Beekeepers Association will sponsor the event. Beekeepers, suppliers, and the general public are invited. Admission is free.

There will be demonstrations in bee handling, movies, slide shows, door prizes and other demonstrations and contests.

Suppliers to beekeepers will be displaying a wide variety of wares. There will be displays explaining bee culture, the honey harvest and other aspects of beekeeping that will be of interest to everyone, whether or not they keep bees. Plan now to attend this exciting annual event.

★ *KENTUCKY* ★

Summer Conference Schedule Eastern Kentucky University Richmond, Kentucky

Friday, July 18

8:00 a.m.	Registration, Charles Barton
9:00 a.m.	Movies (1947) — A Queen is Born and State Fair Honey Show, Charles Barton & Bill Eaton
10:00 a.m.	Practical Beekeeping Management, George Van Arsdall, Ozark Honey Farms, Sibley, Mo.
11:00 a.m.	Welcome to Apple Country, Myron Evans, Johnson Co. Extension Agent and Bill Eaton
11:45 a.m.	Pollination by Insects Other Than Honeybees, Dr. Rudy Scheibner, Univ. of Kentucky
12:15	Lunch
1:15 p.m.	Arlington Hunting Scenes, J.W. Stocker
1:30 p.m.	Fox Hound Country, "Kip" Walker
2:00 p.m.	Honeybees and Horticulture, Dr. Dean Knavel, Horticulturist, U. of Kentucky
3:00 p.m.	Public Relations for Beekeepers, Dick Kehl, A.I. Root Co.
4:00 p.m.	Management of Honeybees for Honey Production and Queen Rearing, Leslie Little, State Apiarist retired, Shelbyville, Tennessee
6:00 p.m.	Dinner
7:00 p.m.	After Dinner Speaker, Charles Martin, Stanford, Ky.
7:30 p.m.	Selection and Crowning of State Honey Queen, Mrs. Barbara Erpenbeck

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Saturday, July 19

8:00 a.m.	Honeybee Management, Mike Van Arsdall, Ozark Honey Farms, Sibley, Mo.
9:00 a.m.	Forest Fires, Conservation and Honeybees, Brian Knowles, Wildlife Biologist,
10:00 a.m.	History of Amos Ives Root, Dick Kehl, A.I. Root Co.
11:00 a.m.	Honey Processing for Show and Sale, Leslie Little, State Apiarist retired.
12:00	Lunch
1:00 p.m.	Honey Sales and Promotion, George Van Arsdall, Ozark Honey Farms, Sibley, Mo.
2:00 p.m.	Promoting Bees in Ohio, Don Cooke, Terrace Park, OH
2:30 p.m.	State Fair Honey Show, O.W. Landon, Director of Honey Sales Booth and Barbara Horn, Dir. Honey Show
3:00 p.m.	Bee Board, Don Cooke

For more information and registration contact: Kentucky State Beekeepers Assn., Silas Keene, Treasurer, Rt. 1, Paint Lick, Kentucky 40461.

★ *MINNESOTA* ★

Minnesota Honey Producers Association, Inc.
Summer Meeting, Holiday Inn
Fergus Falls, Minnesota
July 17-19, 1986

Thursday:

7:30 p.m.	Crop and Market Meeting and Films, Steve Klein, Pres.
8:30 p.m.	Honey Queen Candidates and Social Hour

Friday:

8:30 a.m.	Registration
9:15 a.m.	Opening Remarks, Steve Klein, President-MHPA
9:30 a.m.	Invocation, Walter Sundberg
9:35 a.m.	Mr. Harry Sulivan, ASCS
10:45 a.m.	Dr. Basil Furgala, "Future of Beekeeping in North America", Apiculture Dept., U. of Minnesota
11:30 a.m.	Dan Hollerbach, "How Minnesota Honey Producers Association Money is Used".
11:45 a.m.	Minnesota Honey Queen, Minnesota Honey Princess, Honey Queen Candidates
12:00	Lunch
1:30 p.m.	Panel, "Selling Honey For the Next Four Years, and Beyond", Moderator, Steve Klein, representative of Sioux Honey and Melford Olson Co.
2:30 p.m.	Steve Duff, Dept. of Entomology, U. of M., "Pollen Trapping Honey Bee Colonies"
3:15 p.m.	Dick Hyser, Apiary Inspection Supervisor, MN. Dept. Ag., "Apiary Report"
5:00 p.m.	Visit to Sundberg Apiary
6:39 p.m.	Barbeque at Sundberg's Apiary

Saturday:

9:00 a.m.	Ms. Linda Ferguson, Commercial Mass Marketing Manager, Great American Ins. Co., "Liability Insurance for Beekeepers";
9:30 a.m.	Richard Harrell, Jr., Hayneville, Alabama
10:15 a.m.	Mr. and Ms. Bill Remple, Motley "Indoor Wintering"
11:45 a.m.	Meeting adjourned

For more information contact: J. Dwight Hull, Chairman of Lake Region Program Committee for MHP's summer meeting, Route 2, Henning, Minnesota 56551.

★ *MISCELLANEOUS* ★

Western Apicultural Society Holds Annual Meeting

The Western Apicultural Society of North America will hold it's annual meeting on August 18-22, 1986, at the University of Victoria, Victoria, British Columbia, Canada.

A one day short course will be offered on Monday, August 18th. The short course will take an in-depth look at the preparation and judging of liquid and creamed honey and candles. There is room for only 35 participants so early registration is recommended. To obtain registration materials, schedules, etc. contact: WAS 86, 749 Haliburton Road Victoria, B.C., V8Y 1H7 Canada.

★ *MISSOURI* ★

The Eastern Missouri Beekeepers Association honored Mr. William Garesche as the Beekeeper of the Year for 1985. Mr. Garesche is a beekeeper of experience and a member of E.M.B.A. for over 25 years. During these years, Mr. Garesche has held the offices of President and Vice President of E.M.B.A. and the chairmanships of the Program, Picnic, Swarm Pick-up, and Refreshment committees. On the state level, he was secretary of the Missouri State Beekeepers Association for 2 years. As the current President Curt Dennis stated, "Bill has truly been a friend to the honey bee, beekeeping, and all beekeepers". Mr. Garesche (left) was presented the award by President Curt Dennis.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★
★ ***YOUR NEXT*** ★
★ ***MEETING NOTICE*** ★
★ ***COULD HAVE*** ★
★ ***BEEN HERE*** ★
★ ★
★ ***LET YOUR*** ★
★ ***MEMBERS KNOW!*** ★
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

The Eastern Missouri Beekeepers Association honored Mr. Bob Hardy of KMOX radio in St. Louis as Honorary Beekeeper of the Year for 1985. Mr. Hardy, a beekeeper for approximately 7 years, recalled how he became involved with honey bees and his fascination and experience with them. Mr. Hardy was made an Honorary Beekeeper of the Year in recognition of his contributions to the honey bee and beekeepers. Through his periodic comments on the KMOX Morning at Your Service Program, Mr. Hardy has disseminated facts, corrected errors, and calmed fears concerning the honey bee. Mr. Hardy (left) was presented the award by Larry Hensley.

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★ *MONTANA* ★

Honey Show

A special open honey show will be held to honor American Honey Queen De Ann Rahija, August 9-16, 1986, Billings, Montana. FAIRTIME Yellowstone Exhibition and Eastern Montana Beekeepers Association will sponsor the honey show.Entries can be sent to FAIRTIME Yellowstone Exhibition, Department L-Culinary, P.O. Box 2514, llings, Montana 59103. Entries are to arrive prior to August 7, 1986. The fairgrounds will also be open for reception of exhibits. Return postage must be sent with exhibits.

Honey Queen De Ann Rahija will judge the entries. Entries that are sent by mail or UPS must have the name of the exhibitor together with a list of entries and lot numbers enclosed in the package.

Those who want a complete 1986 premium and honey show catalog list can request it from FAIRTIME Yellowstone Exhibition, P.O. Box 2514, Billings, Montana 59103 or contact: Albert G. Bell, 2857 Colton Blvd., Billings, Montana 59102, (406) 656-4806.

★ *NEW YORK* ★

Dr. Thomas D. Seeley, Phi Beta Kappa from Dartmouth, voted the outstanding graduate student in biology at Harvard and currently an Associate Professor of Biology at Yale, will be coming to Cornell. He will be joining the Section of Neurobiology and Behavior. Dr. Seeley is the author of "Honey bee Ecology".

Empire State Summer Picnic

The Empire State Honey Producers Association will hold their annual summer picnic at the home and honey house of Mr. and Mrs. Raymond Churchill of Watertown. The date is Saturday, July 26 and the starting time is 10:00 a.m.

Ray has won more silver bowls at Eastern Apicultural Society honey shows for his comb honey than any other single person.

The Churchills live in Burrville, east of Watertown. Take Exit 44 off Interstate 81 and proceed east on Brookside Drive. Signs will be posted. In Burrville, turn right onto Plank Road and it is only a short drive to the Churchills. From Utica take Route 12 to Burrville.

★ *NORTH CAROLINA* ★

North Carolina Beekeepers Summer Meeting

Speakers: Dr. Steve Taber, bee specialist and queen breeder; B.J. Sherriff, English beekeeper and bee dealer; James Dunn, beekeeper, newspaperman and magazine editor; Darl Stoller, maker of "fine" creamed honey; Larry Bixby, NCSBA president and bibliophile; Aristotle, beekeeper, philosopher, scientist and jack-of-all-trades; and many more.

Bee Schools: Two different schools, (1) Journeyman (Intermediate) Level Course (2) Master Beekeeper (Advanced) Level Course.

Workshops: Tracheal Mite ID & Detection; Bee Diseases ID & Detection; Assemblying Bee Equipment; Beeswax & Candle Making; Tests - all Master Bkp. Levels; Working with the Media; Cooking with Honey; Creamed Honey Making; Making a Solar Wax Melter; and Bait Hives and Their Use.

For more information contact: Dr. John T. Ambrose, 1403 Varsity Drive, Raleigh, NC 27606, (919) 737-3140.

★ *OHIO* ★

International Beekeeping Seminar

The Annual International Beekeeping Seminar is set to take place at the Agricultural Technical Institute, Wooster, Ohio from July 21 — August 1, 1986. This is a comprehensive introduction to developmental beekeeping with emphasis on the tropics and subtropics. A discount of $200 on reservations received before June 1 will be given. For information contact Dr. Clyde Oplinger, ATI, Wooster, Ohio 44691, phone (216) 264-3911.

Summer Seminars at ATI in Wooster

Basic Beekeeping. July 7-11, 8:00 a.m. — 4:30 p.m. Topics include honey production, honey and wax processing, bee biology and behavior, disease and pest control, equipment, hive management and pollination. Credit, non-credit, room and meals available.

Comb Honey Production. August 18-19. Covers all aspects of producing comb honey.

All seminars originate from the new fully equipped facility. For more information on these or any Beekeeping Seminars contact Dr. James E. Tew, Ohio State University, Agricultural Technical Institute, Wooster, Ohio 44691, Phone (216) 264-3911.

OSBA Summer Meeting ATI, Wooster, Ohio

Friday:

8:00 a.m.	Registration
9:00 a.m.	Welcome and Announcements, Pres. Jim Thompson
9:15 a.m.	Is new inspection program working?, Gordon Rudloff, State Apiarist
9:45 a.m.	Make Mead Successfully, Dr. James Gallander
10:45 a.m.	Bees and Product Liability, John Gilchrist, Attorney
11:00 a.m.	Introduce Queen Candidates, Carolyn Coufalik, '85-'86 Queen
12:00	Lunch
1:15 p.m.	Can Honey be Marketed?, Gary Reynolds
2:15 p.m.	Export honey?, Heather Crombie
3:00 p.m.	Your Choice — Local Tours (Bring Veil)
5:45 p.m.	Chicken BBQ
7:00 p.m.	Auction
8:00 p.m.	Dance

Saturday:

8:00 a.m.	Registration
9:00 a.m.	Announcements, Pres. Jim Thompson
9:15 a.m.	Business Session
9:45 a.m.	Ohio Extension Update, Dr. James Tew
10:30 a.m.	Maintaining Honey Quality, Gary Reynolds
11:15 a.m.	Detecting Bogus Honey, Dr. Landis Donner, Research Scientist, USDA
12:00	Lunch
1:00 p.m.	Workshops: Queen Rearing, Phil Mariola - ATI Technician; Removing bees from a log, Jim Thompson (bring your veils); Uses of beeswax, Mary Lou Campbell
2:00 p.m.	Repeat of Workshops
3:00 p.m.	Present New Ohio Honey Queen, Announce Contest Winners, Door Prize Drawing
3:35 p.m.	Adjourn

Competitions: Honey — white, lt. amber, dk. amber (3-1 lb. clear containers per category); Comb Honey — (3 cut comb sections, 3-1 lb. sections, 3 round sections); Beeswax (Cake, 3-1 lb. pieces, Carved, 1 carving); Color Photo — honey bee on plant blossom, 5 x 7 matted.

An individual may enter as many of the contests as they desire. All entries

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must be in place by 10:00 a.m. Saturday, July 19. For more information contact: John C. Grafton, RT. 1, Box 269, Steubenville, Ohio [illegible]2 (614) 282-2076.

★ *MICHIGAN* ★

Michiana Beekeepers Association Summer Meeting

The MBA summer meeting has been planned for July 11 and 12, 1986 at Notre Dame University, Notre Dame, Indiana. The summer meeting is being hosted by Michiana Beekeepers. It will be held in the Library Conference Center on Campus.

The banquet this year will be a picnic with a tour of the University. The picnic will beheld Friday, July 11 at 6:30p.m. The tour will begin at 5:00p.m. The cost is $10.00 per person. Reservations should be made by July 1. For more information contact Chris Dahlke, 4908 Hillandale Road, Sodus, MI 49126, Phone (616) 925-8146.

MBA Program

Friday:

1:00 p.m.	"Palletizing and Mechanizing Your Beekeeping Operation for Greater Profits, Efficiency, and Pleasure", Mr. Ed Eisele, Berrien Springs
[illegible] pm.	"Cut-Comb Honey Production", Eugene Killion, Supervisor, Bureau of Apiary Inspection, Paris, Illinois
2:30 p.m.	"My Experience With Brazilian 'Killer Bees' ", Dr. Harold Esch, Prof. of Biological Science, Notre Dame University
3:30 p.m.	Honey Queen Report
4:15 p.m.	Question & Answer
5:00 p.m.	Guided tour of Notre Dame University
6:30 p.m.	Picnic

Saturday:

9:30 p.m.	Travelogue
10:00 p.m.	"Management Tips For The Honey Flow"; "My Beekeeping Experience in Dominica", Dr. Roger Hoopingarner, Prof. and Apiculture Spec.
10:45 - p.m.	"New Developments In The Pesticide Bee Problem", Dr. Bill Chaney, Extention Entomologist, Purdue Univ.
11:30 p.m.	Question & Answer
1:00 p.m.	"Labeling, Packaging and Marketing of Honey", Gerry Hayes, Dadant & Sons, Inc.
1:45 p.m.	"Stinging Insect Allergy — The Sting Revisited", Dr. Robert W. Claussen, M.D. and Associate Prof. Notre Dame
[illegible]30 p.m.	Honey Queen Auction
[illegible]5 p.m.	Honey Check Off System for Michigan, Discussion

OBITUARY

CARL M. TEASLEY

Carl M. Teasley, long time beekeeper and Tennessee State Bee Inspector passed away April 28th. He was a resident of Ocoee, Tennessee and an employee of the Tennessee Department of Agriculture for 40 years. He was a founder and the first president of the Chattanooga Area Beekeepers Association in 1942. He was past president, secretary and treasurer of Old Fort Puritan Club and secretary-treasurer of the RC&D of the Chattanooga area. The World War II veteran was a member of the Polk County, TN Historical Society. Survivors include his wife, Maybelle, three daughters, one son and seven grandchildren; his mother, Hettie, three sisters and five brothers. His wisdom, counsel and presence will be missed.

★ *TENNESSEE* ★

1986 TENNESSEE HONEY QUEEN WINS AWARD

Laura Overbay, 1986 Tennessee Honey Queen, recently placed second at the annual science fair sponsored by East Tennessee State University, Johnson City, TN. Laura's project, "HONEY BEESINESS", dealt with the pollen found in honey. Her findings showed that no "pure" honey exists and that all honey has a mixture of pollen grains and is labeled according to the dominant pollen source present. She was judged on appearance and content of her topic and knowledge of the subject. Laura will be displaying her exhibit on the state and national levels.

★ *VIRGINIA* ★

Virginia State Beekeeper's Assn.
1986 Summer Meeting
July 11, 12, 1986
James Madison Univ., Harrisonburg, VA

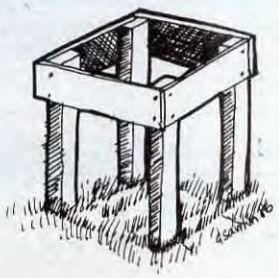
Friday:

9:00-11:30	Registration
1:00-2:30	Registration
10:00 a.m.	Welcome, Pres. Frank Fulgham
10:15 a.m.	A Commercial Beekeeping Operation in Alabama, T. Kruetsman
10:50 a.m.	Building Colonies for Nectar Flows, Tom Hooker
11:30	Lunch
1:30 p.m.	What's New in the Beekeeping Industry, Dwight Tew
2:00 p.m.	Why I Keep Bees, A. Blanks
2:30 p.m.	Classic References on Beekeeping, R. Fischer
3:30 p.m.	Workshops: (1) Cooking with Honey, A. Harmon; (2) Teaching Apiculture in the Schools, Doris Baker; (3) Pollen Trapping and Handling, Ernie Miner; (4) Trachael Mites: Biology and Dissection Techniques, R. Fell [Limited pre-enrollment]; (5) Continuation of Queen Rearing Short Course.
7:30 p.m.	The Africanized Bee, Experiences in Nicaurauga and What It All Means, H. Powers
8:30 p.m.	Reception in Display Room

Saturday:

9:00 a.m.	Registration
9:15 a.m.	Call to Order
9:30 a.m.	Marketing Honey and Honey Promotion, D. Tew
10:30 a.m.	Bee Venom and its Medicinal Use, Ann Harmon
11:30 a.m.	Lunch
1:00 p.m.	Business Meeting
1:45 p.m.	Equipment and Use of Plastics in Beekeeping, E. Miner
2:30 p.m.	Update on Virginia Apiary Inspection; Meeting the New Inspectors, F. Fulgham
3:30 p.m.	Workshops: (1) Video Film on African Bees; (2) Making Nucs, H. Goyne; (3) Evaluating Colonies and Moving Bees; (4) Tracheal Mite Workshop Continued; (5) Queen Rearing Course Continued.
7:30 p.m.	The Bee Knowledge and Trivia Exam — A Self Test of Apiculture
8:15 p.m.	Answers and Discussion of the Exam. Plus an open question and answer session with the speakers.

For information contact: Main Desk, James Madison University, Chandler Hall, Harrisonburg, Virginia (703) 433-6626.



MORSE . . . Continued from Page 358

Excluders and Bee Escapes

Often when one removes a queen excluder a bee escape is put in its place. The two work well together. I like bee escapes because they are simple and easy to use. As in the case of queen excluders, I've heard many people argue against their use but since there is no perfect way of removing supers of honey, each method will have its advocates. If the escapes and excluders that are used have wooden rims it is worthwhile to paint the wood of each a different color so that a glance will tell which is which when they are in place on a hive.

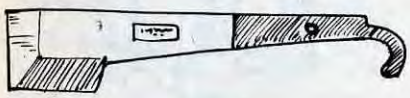
Proper Storage of Queen Excluders

Queen excluders work because the queen has a wider thorax (the middle body part that bears the legs and wings) than a worker bee. The spacing between the wires, or of the perforated space, allows a worker to move through it easily but this means that if the space is made only a bit wider a queen can move through it just as easily. It is very simple to damage a queen excluder and if the space is made only a little wider one would not see the difference with the eye.

Queen excluders should be stored flat and never on their sides or ends where they might sag out of shape. I like to keep excluders off the floor for fear of someone stepping on them. A wide shelf is best for queen excluder storage though we keep our excluders in a cabinet that gives them good protection.

Summary

Queen excluders can be of great assistance. They make removing the crop easier because one knows where the brood is located and there will be no brood in the honey storage supers. The greatest danger in using a queen excluder is that one may have inadvertently damaged it and made a space wider so that a queen could crawl through. For this reason it is important to store queen excluders carefully so that this will not happen.□



MAILBOX . . . Continued from Page 366)

million or so bees plying their trade at the National Arboretum.

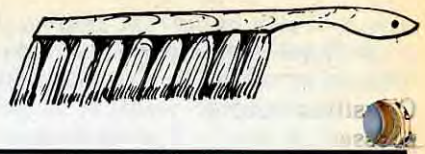
In short order, suited up and appropriately veiled, Officer Abernethy arrived at the scene with his bee brush, gently swept the bushel-sized ball of invaders into a "swarm box" and relocated them to his home in southern Maryland, where he reports they are doing well, with no further signs of political ambitions.

Wayne King, Warren Weaver, Jr.

Shortly after this appeared I got a call from nearby Andrews Air Force Base. A swarm had landed near the hanger that houses Air Force One, the President's personal plane. Air Force security accompanied me to these bees and within a week they had packed a brood box and I have now added a second brood box to these "Reagan" bees.

Harold Liberman
2701 Oxford Ct.
Upper Marlboro, MD 20722

Editor's Note: It's too bad they didn't land closer to the halls of Congress. The value of bees and beekeepers would have perhaps been impressed upon those who are deciding our future.



☆ Classified Corner ☆

Classified rates: 49¢ per word, each insertion payable in cash in advance. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) counts as one word. Not less than 10 words accepted. Copy or cancellation orders MUST be in by the 1st of the month preceding publication. Blind Ads $6.50 additional charge per month. Send classified ads to: The A.I. Root Co., Advertising Dept., ***Gleanings in Bee Culture***, Box 706, Medina, Ohio 44258-0706.

Seven Steps To More Sales From Your Classified Ads

"Classified advertising is a powerful sales tool, and it's probably the most cost-effective way to generate inquiries."

Whether you have never placed an ad before, or whether you have been using classified advertising for years, you can generate more sales by following these seven simple steps:

1) Follow the AIDA principle. Classified advertising must follow the rules of all good advertising. The AIDA principle is one way to sum it up: *A*ttention, draw *I*nterest, create *D*esire and cause *A*ction.

2) Put "U" Before "I". It doesn't work that way in the alphabet, of course, but in advertising "you" comes before "i". It's another way of saying that when you are selling put the emphasis on the reader. Your ad should tell the reader what your service or product will do for the reader!

3) Be aware of the classified ad's limitations. You can sell directly from a classified ad only if you ask for a small sum for a catalog, sample or modest product. Leave your full sales message for display ads and direct mail; the classified's job is to entice prospects to write or call for more information.

4) Use power-packed sales words. There are certain words and phrases that are generally successful in all advertisements. The favorite six are FREE, NEW, AMAZING, HOW TO, NOW and EASY.

5) Do not worry about the word count. Your first job is to get all the benefits and selling words about your product or service on paper. Then comes the rougher job of editing and polishing!

6) Say more in fewer words. The average classified is 20 to 25 words. Generally, if you can't state your proposition in 35 words or less, go back and analyze your offer.

Find brief ways to say the same thing: use "10¢" rather than "10 cents"; write "Satisfaction guaranteed" instead of "Money back if not satisfied"; say "Details free" or "Free Information" rather than "Write for free details".

7) Key your ad. A "key" is a device to code an ad so that you can tell where an inquiry or purchase came from. It should always be used when you advertise in more than one publication.

MAGAZINES

THE AMERICAN BEEKEEPING FEDERATION needs your support! Join in supporting efforts to stop adulteration, to improve marketing conditions and to encourage the continued research on African Bees and Varroa and Acarine Mites. Send for information, membership application and sample copy of bi-monthly News Letter! Write To: THE AMERICAN BEEKEEPING FEDERATION, INC., 13637 N.W. 39th Avenue, Gainesville, FL 32606. TF

THE SCOTTISH BEEKEEPER Magazine of The Scottish Beekeepers' Association, International in appeal. Scottish in character. Membership terms from A. J. Davidson, 19 Drumblair Crescent, Inverness, Scotland. Sample copy sent, price 20 pence or equivalent. TF

What do you know about the INTERNATIONAL BEE RESEARCH ASSOCIATION? The many books and other publications available from IBRA will deepen your understanding of bees and beekeeping: and IBRA membership subscription — inclusive of ***Bee World,*** a truly international magazine published quarterly in the English language — will broaden your beekeeping horizons. Details from IBRA voluntary representative H. Kolb, P.O. Box 183, 737 West Main, Edmond, OK 73034 (phone 405-341-0984); or from IBRA, Hill House, Gerrards Cross, Bucks SL9 ONR, UK. TF

DAIRY GOATS — for milk, pleasure and profit. Excellent for children, women and family! Monthly magazine $11.00 per year ($13.50 outside U.S.A.). DAIRY GOAT JOURNAL, Box 1808 T-3, Scottsdale, Arizona 85252. TF

SCOTTISH BEE JOURNAL. Packed with practical beekeeping. Sample copyt from Robert NH Skilling, FRSA, 34 Rennie St., Kilmarnock, Scotland. Published Monthly, $4.00 per annum. TF

BEEKEEPING. A West Country Journal — written by beekeepers — for beekeepers. 1.50p inland or 1.80p ($4.00 Overseas). 10 issues yearly. Editor, R. H. Brown, 20 Parkhurst Rd., Torquay, Devon, U.K. Advertising Secretary, C. J. T. Willoughby, Henderbarrow House, Halwill, Beaworthy, Devon, U.K. TF

BEE CRAFT — Official (monthly) magazine of the British Beekeepers Association. Contains interesting and informative articles. Annual Subscription $5.10 (Surface mail) and $7.10 (Airmail). The Secretary, 15 West Way, Copthorne Bank, Crawley, Sussex, RH10 3DS TF

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A.I. ROOT ADOPTS NEW TRADEMARK

ROOT

For the third time in it's history, The A.I. Root Company, publishers of *GLEANINGS IN BEE CULTURE*, has changed it's trademark. The first Root trademark appeared in the 1890's and had as it's focal point the honeybee and a clover leaf representing the relationship between the honeybee and it's prime source of nectar, the legume.

In the early 1920's the script Root trademark was introduced and has been used to this time.

In keeping with the cleaner graphics and simpler design of modern marketing, the new Root trademark illustrates the Skep, the symbol of beekeeping almost throughout it's long history. The Skep has been used since man began making hives for bees, and to some extent is still in use today. Rev. Langstroth's invention of the modern, moveable frame beehive was being largely ignored when A.I. Root encounted his first swarm of bees and caught "bee fever". He was the first to commercially produce the Langstroth moveable frame hive and offer it for sale to beekeepers throughout the world. He was also a staunch defender of the Langstroth patent, as later patents attempted to infringe on it. Thus, the Skep symbolizes the beekeeping heritage of the 117 year old firm as it proceeds into the future.□ □ □

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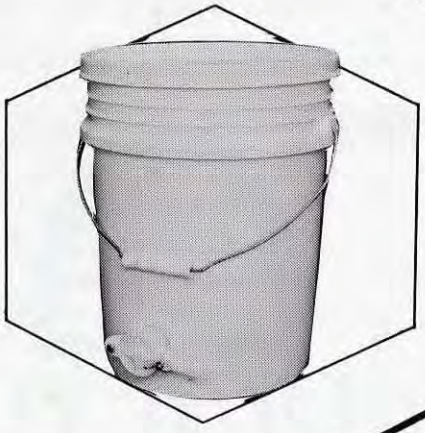

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