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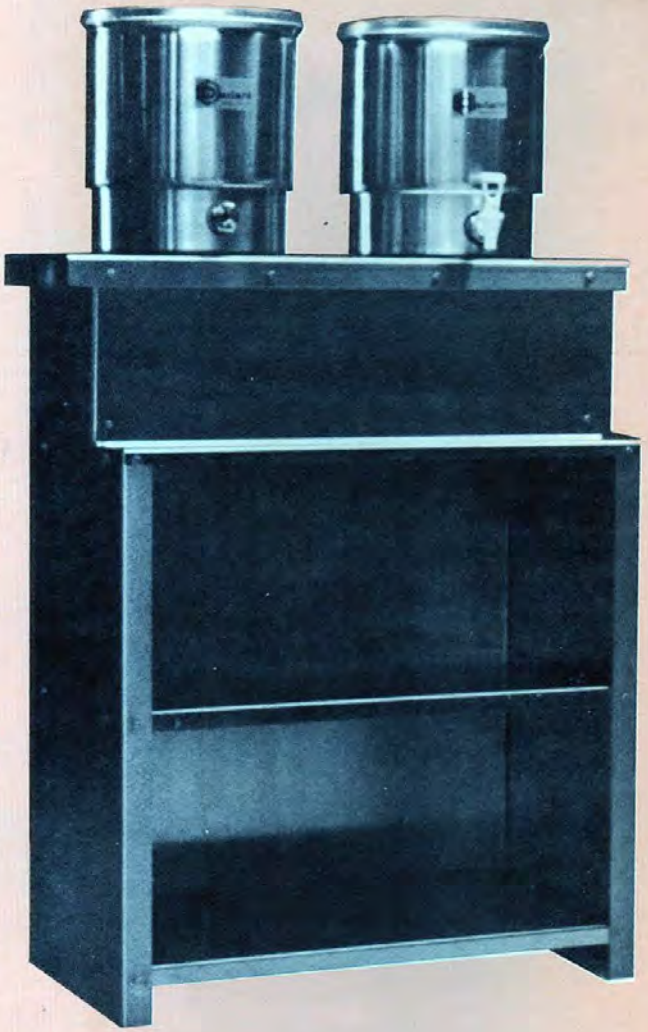

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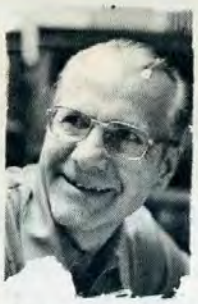

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GLEANINGS IN BEE CULTURE

Since 1873

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CONTENTS

COVER STORY

Abandoned hive covers left at the death of Clyde Baxter, a lifelong outstanding beekeeper in the Catskill Mountains of NY. His bees were sold but the old-fashioned covers left behind on one of the hive stands. A bittersweet image of Autumn. Photo by Gary Fontana.

NOTES FROM THE BEEYARD

Breeding Bees Resistant To The *Acarapis* mite

By STEVE TABER of Taber Apiaries, 3639 Oak Canyon Lane, Vacaville, Ca 95688

At the recent meeting of the Western Apicultural Society in Davis, California, I was discussing with Mark Bruner, editor of *Gleanings In Bee Culture,* my thoughts about the possibility of breeding bees resistant to *acarapis.* Later on he wanted more information and then requested of me to write these thoughts down and share them with you.

For those of you unfamiliar with this mite, here is a brief review. The bee breathes through little holes in the thorax and abdomen called spiracles. (See Snodgrass for a full description) These spiracles are on each side of the body and apparently their total function is not quite understood. We don't know whether those in the thorax are used for exhaling air and those in the abdomen for inhaling or whether they are both used for inhaling and exhaling. At any rate the adult mite (*Acarapis woodi,* Rennie) either male or female enters the spiracle of the thorax and then attaches to the trachea. If enough of these mites get into the bees' bodies, have difficulty breathing and apparently die. The mite is in that same group of arthropods as the spiders and has eight legs. It only can be determined by a microscopic examination.

Basically, my argument is that every time that plant or animal breeders have concentrated efforts to develop genetic resistance to a specific organism they have been successful. I quote from the publication from the Council for Agricultural Science and Technology: "Resistance of plants and animals to attack by insects may be affected by genetic properties that can be manipulated by breeding. The degree of resistance ranges from very low resistance to complete resistance in which a specific insect is not known to attack the plant or animal under any conditions. There are these mechanisms or resistance: (1) occurence of substances in the host that are toxic or act as a repellent to the insect, (2) tolerance of injury that would damage a susceptible plant variety or animal breed, and (3) occurence of host characters such as plant leaf hairs or thick animal hides that lead insects to look elsewhere for food . . .

Steve Taber

Breeding animals for resistance to insects or arthropods is a longer process, but research is being conducted along these lines." I think they left out the hygienic behavior discovered by Rothenbuhler that makes bees resistant to AFB.

I receive a lot of correspondence from all over the world and most of it is very interesting. Just recently I received a letter from Fco. Reyes O. in Cordoba, Veracruz, Mexico, of two possible mechanisms of resistance to *acarapis.* In trachea he found white masses that were indentified as yeast. The yeast grows on and kills the mite. The identification had been made by Dr. Lavie of France in 1955. Then he further states that Hirschfelder discovered that some bees have body hairs around the trachea that prevent the mite from entering the spiracles.

So we have a possible mechanism for breeding for resistance. I would suggest attacking the problem in the following way: First it is necessary to find out the genetic variability present and the best way to do that is to use artificial insemination (AI). Make matings using one drone only, or by inbreeding using multiple matings. Workers from all matings would be examined for the number and stiffness of hairs around each spiracle. Those lines that show the greatest degree of development should be crossed and identical observations made on the second generation.

Now then, you need the mites. The bees at some stage of the breeding program will have to be actually tested with the mite to see if actual penetration of the mite is stymied. At this stage of the game that would mean that the research would probably have to be done out of this country.

References

Hirschfelder, H. and H. Sachs. 1952. Recent research on the *acarine* mite. *Bee World* 33(12):201-208.

Snodgrass, R.E. 1956 Anatomy of the Honey Bee. Comstock Publishing Associates. Cornell University Press, Ithaca, NY, 334 pp.

Report No. 93, March 1982, from the Council for Agricultural Science and Technology. $5.50 from Memorial Bldg. Union. Ames, Ia 50011.

UPDATE ON THE ACARINE MITE SITUATION

According to the Animal, Plant Health Inspection Service (APHIS), bee populations found to have been infested with acarine mites, have been destroyed in Turkey, Texas. Similar "depopulation" will next take place in Three Rivers and Corpus Christi.

On a positive note, APHIS has followed up on reports that queens from Chandler Apiaries (where infestation was first discovered) were shipped into Mississippi. Surveys there indicate no infestation to date. Additionally, traces of of shipments to other parts of the country have revealed no spread of the pest.

Although this could not be confirmed as of press time, it has been reported that Georgia, in light of a Federal quarantine against all or parts of 13 infested Texas counties, has lifted its total state quarantine against movement of any bees into or through Georgia, and will now require a certification that bees shipped into that state, are mite free.

As of yet, few discussions have been held with the Mexican government. The cooperation of that country is seen as vital to the eradication effort. In that total eradication of the mite is still the official objective, the emergency use of the chemical miteicide, Folbex, has apparently not reached a point of real consideration.

It is important to realize that, with such an infestation, rumors of spreading are inevitable. Such rumors cannot be dismissed, offhand, but beekeepers should also be cautious of unsubstantiated information. To date, the quarantine applis ONLY to all or portions of Bee, Cameron, Chambers, Floyd, Hale, Harris, Hidalgo, Live Oak, Motley, Starr, Swisher and Willacy counties in Texas. Furthermore, it should be remembered that many high quality queen breeders and package bee companies reside in Texas. These companies should not be held guilty by geographical association. All indications are that, for the time being at least, the acarine mite is being contained and infestation has not spread, as some have feared, to areas outside those indicated above.

The Monthly Honey Report

September 10, 1984

The following figures represent the current prices reported by beekeepers and packers over the country. 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
60 lbs. (per can) White	42.00	47.00	58.00	40.00	36.12	38.10	36.00	35.25	40.80
60 lbs. (per can) Amber	40.00	41.00	52.00	38.00	31.62	30.60	30.00	34.00	37.80
55 gal. drum (per lb.) White		.53	.58	.57			.55	.53	58
55 gal. drum (per lb.) Amber		.46	.52				.50	.47	.54
Case lots — Wholesale									
1 lb. jar (case of 24)	28.50	24.45	24.20	25.92	38.40	24.25	24.75	25.00	25.20
2 lb. jar (case of 12)	27.50	23.35	23.88	23.76	34.80	23.00	24.00	24.75	
5 lb. jar (case of 6)	30.00	27.70	26.75	23.04		28.50	24.25	24.50	24.50
Retail Honey Prices									
½ lb.	.90	.90	.80	.85	.85	.90	.87	.87	.90
12 oz. Squeeze Bottle	1.50	1.24	1.35	1.19	1.50	1.25	1.14	1.10	1.50
1 lb.	1.50	1.39	1.35	1.42	1.85	1.40	1.27	1.60	
2 lb.	2.70	2.59	2.65	2.62	3.55	2.50	2.25	2.60	
2½ lb.	3.35					3.00		3.20	
3 lb.	4.00	3.50		3.39	4.98	3.75	4.005	3.70	3.60
4 lb.	5.00	5.00		4.99		4.75	4.70	4.60	
5 lb.	6.00	6.00	5.95	5.39		5.50	5.40	5.45	5.00
1 lb. Creamed		1.60	1.45				1.50	1.45	1.50
1 lb. Comb	2.25	2.25	2.25		1.95	1.75	2.10	1.60	1.92
Round Plastic Comb	1.75	1.75	1.95				1.75	1.70	1.65
Beeswax (Light)	1.30	1.35	1.45	1.40	1.25	1.50	1.15	1.15	1.25
Beeswax (Dark)	1.20	.1.15	1.25	1.25	1.15	1.40	1.05	1.10	1.15
Pollination Fee (Ave. Per Colony)	23.00	20.00	27.50	18.00	19.00		19.00	19.00	25.00

MISCELLANEOUS COMMENTS

REGION ONE

Fall flowers are in good shape and yielding for fall flow. Some areas will have good crops but most are up to 30 percent below average with late flows.

REGION TWO

N.Y. reports little or no changes in retail prices; but that honey at fairs and farmer's markets is selling at much lower prices -- as little as $1.00 per pound. Goldenrod has just started there. Very little honey mid-June through mid-August. Upstate N.Y. beekeepers report spotty flow. W.V. bees strong. Cool nights and bright sunny days there. Good fall flow. Honey sales slow. No

price changes. PA reports terrible honey sales and a 30 pound average extraction for spring/summer. Wet weather blamed for poor yield.

REGION THREE

Eugene Killion reports good to excellent crop in Illinois. Southern third of state just fair due to dry conditions, but upper two-thirds claiming 150-200 pound averages. Much honey in the 17 percent moisture bracket and water white. Soybeans yielded good in latter July and August, but after that flow weight loss was recorded on scales. Wisconsin crop much more spotty. Sales to wholesale grocers down 20 percent. Most Wisconsin honey going on government loan. Indiana sales below one year ago and at lower prices. Average crop expected.

REGION FOUR

North Dakota bulk sales some less than other years (a reflection of rental fees paid to landowners). Sunflower crop has been severely affected by weevils and subsequent spraying programs. White honey production is short due to very dry conditions (more dry than the five and ten year averages). Most beekeepers started cleanup by Sept. 1. Many beekeepers putting honey on government loan to improve cash flow. Wax market seems to be coming back a bit. Crop looks 70-80 percent

(Continued on next page)

of normal. Crop in Minnesota looks mediocre (approx. 50-65 pounds per colony, which is 50-60 percent of normal crop). Also, honey is high in moisture (18.6 - 19 percent), and producers are planning to sell to the government. One large Twin Cities packer is about $2.00 per case below prices indicated above. Sales slow. The .54 cents per pound quote on this month's list is FOB buyer's dock with drums returned and bonuses for deferred payment that could maximize at .58 per pound. MO reports that bad weather causes an unfavorable fall outlook. Honey is dark this year and sales are slow.

REGION FIVE

N.C. sourwood flow almost a complete failure in some areas due to too much rain during that time.

REGION SIX

Kentucky weather on dry side with temps slightly below normal. Some buckbush surplus earlier in August, with bees making a living since. Crop good except for some central sections. Sales lag except for some fairs and festivals. First commodity loan ever made in KY this summer. TN reports very slow honey market with poor quality crop. Prospects good, however, for goldenrod and aster flow.

REGION SEVEN

Still very dry in TX. Fall flow prospects good if rains come in Sept. Honey moving well but bee supply sales slow. Beekeepers obviously concerned with Acarine mite situation. The crop in S.E. Okla. is the smallest in many years and if a good fall flow doesn't happen, as much as 50 percent of colonies will need feeding in Sept. Much goldenrod seems about to bloom. Prices down at local supermarkets (as low as $3.39 a quart). Sales rather slow.

REGION EIGHT

Most Utah beekeepers expecting an above average crop because of wet weather. The first part of August was dry in Colorado, but rains after the 10th ended the month about one inch above normal. Honey mostly light and of excellent quality. Crop should be about normal. Retail sales normal with stable prices. Should pick up more with canning season. Average rainfall for most of S. Arizona -- prospects look good for late summer with most colonies in good condition.

REGION NINE

Sales of beeswax non-existent. Some activity in the cotton. Size of crop unknown. Disease high in S. California. Some think it is so because of lack of inspection and eradications. Honey sales slow. Washington sales also a little slower. Prices are stable or low. Better than average crops for most of the state. Extremely good crops from blackberry and fireweed in Western Washington. Also, good crops from clover, alfalfa and thistle in parts of E. Washinton. Hot, dry summer in WA.

A SPECIAL THANKS

I've always maintained that the ultimate solutions to problems facing the beekeeping world, will be discovered, in large measure, because of the special bonds keeping beekeepers working together. I was once again reminded of that closeness when, this past August, I was able to take a 10 day trip beginning in British Columbia, stretching through Washington and Oregon, and culminating in Davis, California for the WAS Conference held there. This excursion was made possible, primarily, because of the efforts and kindness of one man: P.F. Thurber, of Kirkland, Washington. Readers of the three major bee journals will recognize Mr. Thurber's name in that he is a frequent contributor to the repository of beekeeping literature. His year of planning made this trip, for me, immensely enjoyable and educational. To his great frustration, Mr. Thurber became ill with double pneumonia and was unable to accompany me as intended. I want, therefore, to publically acknowledge his great contribution to my travels, and to let him know how very much I appreciate his concern, time and friendship. GBC readers will, over the next year, be seeing a significant amount of information in the way of articles, generated as a result of this trip to the west coast. Mr. Thurber and others have mentioned to me their feeling that the western states do not receive adequate coverage in GLEANINGS. I agree. However, with our Western Editor, Larry Goltz, and the friends made on my recent trip, I believe we can remedy that imbalance.

I want, also, to thank my friend and traveling companion, Margriet Wyborn from British Columbia, for her on-the-spur-of-the-moment willingness to take me from B.C. to California; and for all the laughter and life shared on the way. Thanks too, to Doug McCutcheon, B.C. Chief Apiarist and his wife for the hospitality and tour of Vancouver. Mike Burgett (Oregon State University, Corvalis), earns my eternal gratitude for going out of his way to buy me Sierra Nevada nectar. So too, my appreciation to everyone we visited along the way: in particular, the good folks at Koehnen's, Larry and Edna Goltz, Mr. Thurber's bee buddy, Bill Rahr and his wife (the fireweed experience was tremendous, Bill -- and I thank you!); Dr. Norman Gary and Eric Mussen for inviting me to speak at the well-organized and informativve WAS Conference, and Steve Taber for his kindness in letting us visit his home. To all those folks, and many more whom I am apt to be forgetting -- but just momentarily -- I'll not forget your thoughtfulness and the pleasant things you made possible.

Mark Bruner

Beekeeping Technology

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

HOBBY BEEKEEPERS An Attempted Profile Of Their Uniqueness

It is my good fortune to routinely work with beekeepers from all over. I have often wondered what personality characteristics these people have in common that make them elect beekeeping as a hobby. I wish I could use myself as an example of a life-long keeper of bees. In reality, I only became seriously interested in apiculture in 1972 while I was an entomology graduate student at Auburn University. During those days, computer class registration was in its infancy. I had just stood in a long line only to find the class I wanted was filled. In desperation, I went to a much shorter line nearby. It was a basic bee class that was to be taught during the spring quarter. I distinctly recall the first day of class. There were fifteen three pound packages of agitated bees waiting to be installed. I instantly knew I was in some serious trouble. I remember the instructor was reassuring some of the students while others stood nearby waiting to drop the class. Yet, I and approximately twenty others stayed in the class. Those who stayed are the ones in which I have an interest. What brings one to beekeeping? What makes a non-beekeeper buy a bee book, attend a meeting, or in some other way become involved in apiculture? With that thought in mind, I confidently visited the library to get the necessary background information for this article. I couldn't find one word. Oh, there were plenty of books on apiculture — how to control swarming, when to requeen, how to take off honey—but they did not address the basic type of person that takes on beekeeping as an adventure.

In a bit of quandry, I offer the following observations on beekeepers strictly as my opinionated partial list. Even though I see no reason to prioritize the entries, I feel that the first would have to be intensity.

1. Intensity. All beekeepers know the problem of "bee fever". When I contracted the condition, my Mom reassured my wife that it would pass as had water skiing, hunting, and raising chickens. In my case, as with so many others, it did not pass. If possible, it seemed to intensify. This obsessive nature is characteristic of most new beekeepers as they get into the business. We need to be patient and helpful as the person in question passes through this "difficult" time.

2. Openness. Historically, managerial and procedure mistakes have been made. Many beekeepers don't appear to be particularly ashamed of their errors. I think that's good. That openness prevents others from making similar mistakes. The first bellows-type smoker used by A.I. Root blazed up, burned him, and caused him to drop the new-fangled device and subsequently start a fire in his bee yard. Yet, he wrote about this episode and published it in *Gleanings*.

3. Definite Answers. One group of beekeepers wants specific answers to their questions. How often should I re-queen? How much honey should I leave on? Can drugs be used to control AFB? The list could go on indefinitely. There is absolutely nothing wrong with this personality type except that bees may not read the same books and may arrive at different answers. Bees are notorious for not doing what they should. This brings in a totally different group—one that enjoys the variability of bees.

4. Variability. Each time the bees don't act as they should, this individual is challenged. What can be done to correct the condition? All kinds of ideas are called into play to regain control.

5. Interest in Nature. This should come as no surprise. Most bee people are conscious of their own environment and the complexity of it. I am sure our constant exposure to insecticide problems has made us more cognizant of this situation.

6. Tinker-types. Some people are attracted to beekeeping because of all the gadgets that are required equipment. I have talked with so many people who want to build their own equipment or modify what is currently available. This group needs to be encouraged. In many aspects of apiculture, we can stand some equipment improvement.

7. Sense of adventure. This probably applies to most of us. Make a mistake with the bees, and you'll get stung for it. We all know situations when that has happened. If the offense is great enough, the situation may become down-right exciting.

I don't propose that the above list is complete, but I'm comfortable with the catagories offered.

A demographic profile would be as follows. The United States currently has an estimated 225,000 hobby beekeepers who maintain approximately 2.1 million hives. *Gleanings In Bee Culture* recently conducted a survey of its readers and accumulated the following description: Most subscribers are male (85%) and average 50 years of age. There are few beekeepers that are under 21 years old. Most beekeepers own their own home (94%) and live in the country (44%). Many beekeepers (68%) earn more than $20,000 per year and 72% still have household members less than 17 years old. Such beekeepers average 26 colonies of bees and have been beekeeping bees for 15 years.

A few of our non-beekeeping interests are: gardeners (90%), birdwatchers (41%), woodworkers (56%), and fisherman (62%). Such members are only an "average". Obviously, few of us are truly average.

The individual just described may sometimes be a little bit difficult to live with. A lot of credit must go to the non-beekeeping spouse and family. They must be supportive (or at least tolerant) of a hobby in which they may have absolutely no interest. As I have mentioned in previous articles, some close friends may have problems tolerating a new beekeeper. Beekeepers (both new and old) are well-known for being quite single-minded. Such intensity is not all bad. Beekeeping has a long history of beekeepers that maintain-

(Continued on next page)

ed their enthusiasm all their lives. People such as C.P. Dadant, A.I. Root, C.C. Miller, got beekeeping off to a good strong start. It's not difficult to find beekeepers today who still maintain those high standards.

My purpose, as I prepared for this discussion, was to show how different beekeepers are from other hobbyists. I was convinced they were. (Bear in mind I'm a beekeeper, too.) These thoughts were somewhat shaken as I gathered information on the topic.

As an outlet, I run — nothing dramatic. As I stood in the middle of more than 700 runners one day waiting impatiently to spend a Saturday morning running 6.2 miles as hard as we could, I suddenly felt that this group must appear very unusual to non-runners. It was also the day of the local hot air balloon race. I recall seeing a car sporting a bumper sticker that stated "Don't follow me, I chase things that float". The balloonists had special cars, trailers, and ancillary equipment. I thought that that group is also "different". I heard a few days later that it was national rabbit week. I know nothing about rabbits, but many people are very involved in this hobby. One of my brothers is as obsessed with hunting as any beekeeper is with bees. A friend raises earthworms. The list of "different" people goes on forever.

A hobby is something done outside of one's occupation as a source of relaxation. If all these factors are considered, beekeeping is an old well-established respectable pursuit. We are well organized with county, state, national, and international meetings and varied publications. At our gatherings we air our differences and describe our successes. Such close interaction has contributed to our long-term success. We must continue discussing our industry's problems and work for solutions. We have inherited one of the best apicultural organizations in the world. We have responsibility to solve our problems and prepare for the future, thereby insuring new generations of beekeepers.□

*A talk presented to the Eastern Apicultural Society, August 8, 1984.

The Early Years At Beekeeping

by DR. GRANT D. MORSE
121 Ulster Ave. Saugerties, N.Y.

Should a young person go into beekeeping now? I'm thinking of the problems associated with the national policy of free trade which helps to make the price of competitive imports of honey from some other countries cheaper than local prices should be.

Unless a young person, male or female, is the heir of a family honey business and is therefore less free to make choices, I'd suggest that a start be made with a limited number of hives, secure a living from some other source, and learn the business while operating on a small scale.

What is a small scale in beekeeping? I'd suggest a number of colonies somewhere between one and a hundred. That way, many of the problems of a full-time beekeeper have to be met and solved; yet, the financial loss in the event of having to discontinue operation is not so great.

A small scale operation does not necessitate expenditures for such items as a full-size honey house, elaborate extracting equipment, large trucks, and the like. It is also a time of opportunity to start building this equipment if things go well.

But many of the full scale operator's problems do arise; such matters as beeyard location; protection against theft, vandalism, disease, destruction by animals such as bears and skunks, as well as mice; wintering; prevention of swarming; infestation by mites. Investment and interest rates at present levels present problems, considering that a full size colony of bees may necessitate an expenditure of as much as $100.

Small scale operation, with the backlog of security from another occupation, helps take the worry out of beekeeping for the beginner. Don't think that a beekeeper with a large investment in bees, faced with the need of making a significant profit, doesn't have worries. Meager local sources of nectar, the weather and all the problems I listed above, make worry a normal experience for the beekeeper.

The Importance Of Location

A beginner may think an annual yield of 100 pounds of surplus honey is unreasonably high to expect. Considering all the expenses of operation plus a return from investment, a beekeeper simply must have a high-yielding location. Some such locations are where one or more of the following nectar sources is present in good amount: large acreages of raspberry or other fruit; citrus; alfalfa; clover; gallberry; sourwood, etc.

Retailing Is A Specialty

A full time beekeeper should get enough money for honey and wax so that he or she doesn't have to go into retailing unless that is desired. Not everyone is good at selling honey on a retail basis, and you shouldn't blame yourself if you aren't. Managing a honey-producing program is a full-time job.

I have listed some of the causes of worry to the beekeeper. A beginner should make plans to remove as many of these worries as possible, right from the beginning. Starting on a small scale is one very important part of such a plan. Being a beekeeper should be fun. Try to make your early plans so that it will be.

In spite of all that I have said above, there has not been a time in recent years when prices of bees and equipment have been lower.□

Siftings

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This past year I have spoken to a number of beekeepers meetings on the subject of Bee Venom Therapy, and it is a wonderful surprise to see so many beekeepers now getting interested in the subject. It was not too many years ago, even among beekeepers, the subject of Bee Venom Therapy was ridiculed as "nonsense" or worse. Now beekeepers tell me of treating people, such as members of their families with such excellent results. It is inevitable after such an experience, it is impossible to stop, you just have to keep going to see if you can help others that suffer with the terrible pain and crippling of rheumatic disease.

Now that so many beekeepers are actively interested, they should seriously consider attending the Annual meeting of the North American Apiotherapy Society, which will be November 10th this year at the Baltimore-Washington Airport. Soon as one becomes interested in this subject, they immediately want to share their experiences with others who understand and appreciate what they are talking about. Also, they become more interested to learn more about it. If we can get more people to attend this annual Apiotherapy meeting, the more we can learn about the subject. While the main subject of this meeting is to have papers on scientific research reviewed with those working on apiotherapy, much interest can also be created by getting down to the "grass roots" of the subject to have experiences discussed by those who are actually treating people, dogs or horses. After all, the ultimate goal of BV Therapy is to help people. They should be our most important subjects. While we do need more scientific research in Apiotherapy to try and learn the scientific reasons why bee venom and apiotherapy is effective, what really counts is to have arthritics experience the great relief they can expect from the bees. After all, most arthritics don't care how or why Bee Venom Therapy works, they are only interested in getting relief from pain and suffering, no matter why or how. The practical application of Bee Venom Therapy should be given equal consideration to scientific research.

For more information on the meeting of the Apiotherapy Society, write to: Ann Harman, North American Apiotherapy Society, 15601 Aitcheson Lane, Laurel, Maryland 20707. Also include $10.00 for membership fee to help pay expenses of the Society. there will be further notices of the meeting in the beekeeping publications and we hope that all who are interested to share their experiences and those who would like to get some experience, will try to attend this annual meeting.

Anyone who has been in beekeeping for any length of time, I am sure has noticed the drop in the honey market. There is not much interest in honey by the buying public. There is a huge surplus of honey bought up by the government in warehouses, that the government cannot even give away for nothing. How can we ever expect people to appreciate honey as a health food, a reputation that it has enjoyed since ancient history, when now even honey that is given away sometimes has the warning not to feed it to children that it could cause botulism poisoning? Even adults may wonder if honey is healthy at any age. There is only one way to stop these "vicious lies" about honey being a cause of botulism poisoning, that is to prove it by feeding experiments. I have seen too many sick babies over the past 60 years made well again when they changed to a diet of natural milk and honey formula, to believe this. I am certain in my 60 years of experience of honey in the diet that honey will actually prevent and even cure botulism poisoning even better than any antibiotic yet developed. So far, no infant supposed to have developed botulism poisoning had died.

At the EAS meeting in Rhode Island this past August, it appears that a "Savior" has appeared who may save the honey industry from its heavy burden of surplus honey, over 100,000,000 pounds. Robert Kime, from the Department of Food Science and Technology, Cornell University, Geneva, New York 14456, gave a fascinating talk on the discovery of a new use for honey.

Fruit juices, especially apple juice and grape juice in the form of wine is a big business. All these juices when bottled, must be free from sediment. Even though the sediment may be the most healthful part of the juice, it has a bad sales appeal, no one buys apple cider or wine with a sediment in it.

To remove this sediment, various chemicals are used that also removes the pectin of the juice that gives fruit juice its body and flavor. That is why so much of the commercially packed apple cider bottled today is so thin and watery with hardly any flavor.

Robert Kime discovered that honey would remove this sediment from fruit juices, and even from beer, better and faster than the usual chemicals now used. Can you imagine the amount of honey that would be used if wine and apple cider was clarified with honey? Our surplus honey would be gone in no time.

Another discovery by Dr. Kime is to prove honey is NOT the same as sucrose or sugar, as some "Expert Nutritionists" with no experience in honey spout with "sarcastic ignorance". Dr. Kime has a slide he said he would like to show to all those who don't believe there is a difference. In this slide are three test tubes of Apple Cider. One is clarified with honey. In the second, sugar syrup was fed to bees, stored in the comb, and extracted. This "Bee Treated" syrup was added to apple juice and it clarified it almost as good as did honey. The third test tube of apple cider was treated with regular sugar syrup. The tube of cider with sugar syrup showed absolutely no change, in fact even worse than cider with nothing, no clarification whatever. So the bees are doing something to honey that makes it different biologically than ordinary sucrose. What that difference is, is not yet known, but it is different. It may be a reason why the monosacharides in honey do not cause arterial sclerosis as does the disacharide sucrose or sugar. We have a lot yet to learn about in the diet. Almost no research has been done in this field. And there never will be until the beekeepers themselves do it.

As Dr. D.C. Jarvis with his book, *"Folk Medicine"* greatly increased the use of honey in the 1960's in the U.S. and Japan, perhaps Dr. Kime's research will do the same in the 1980's when the honey business again is in such a sad state. Dr. Kime deserves a lot of help from the beekeeper associations. He cannot do this job alone. He deserves our help.□

Research Review

By DR. ROGER A. MORSE
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Increasing The Production Of Package Bees

In parts of northern California colonies are used almost exclusively to produce package bees. An important question is how to stimulate these colonies for the maximum production of bees. A study was made in Davis, California to determine what might be done. In this area colonies have a maximum population in April that declines in late May and reaches a low in August.

Traditionally package bee producers in California stimulate their colonies with sugar syrup in the spring. There is almost no surplus honey harvested in the area where the packages are produced. The data show that feeding pollen supplement in the fall is more helpful in building spring populations than is the fall or spring feeding of sugar syrup.

In the discussion at the end of the report it is pointed out that bees rearing brood must be in good physiological condition to secrete the needed brood food. The Davis area apparently does not have an adequate supply of fall pollen plants. The supplemental feeding of proteinaceous food is of assistance and allows the bees to grow more young in the spring.

Peng, Y.J., M. Martson and O. Kaftanoglu
Effect of supplemental feeding of honeybees (Hymenoptera:Apidae) populations and the economic value of supplemental feeding for production of packages. *Journal of Economic Entomology* 77: 632-6. 1984.

Varroa Mite Biology

Finding the acarine mite in Texas prompts one to think more seriously about other honeybee mites and bee diseases that might some day invade the U.S. and affect the industry. Among these the varroa mite is probably most serious. Many researchers believe it could be more of a problem than American foulbrood.

A short but excellent review of varroa mite biology has just appeared. This mite, which was unknown 20 years ago, has been accidently introduced from Asia into most countries in Europe, Northern Africa and at least five countries in Southern South America.

Adult female varroa mites feed on adult bees taking their blood. The young, developing mites feed on the pupae either killing them or causing the adults to be deformed and much reducing their life span. A report from Argentina, quoted in the paper below, indicates honeybee brood is more heavily infested in the fall than in the spring. The brood that survives, but lives a shorter time, dies earlier. As a result many colonies may die at the beginning of winter. "They normally contain a few hundred dead bees, very little brood and plenty of honey stores."

This paper points out that a serious shortcoming in our research program is that no one from this country is working on honey bee mites or their native hosts in Asia. Even in Asian countries that are building their beekeeping industries the number of bee mite researchers are few. I suggest that those thinking about engaging in bee and bee disease research might think about studying in Asia.

De Jong, D.
Current knowledge and open questions concerning reproduction in the honey bee mite *Varroa jacobsoni*. Advances in Invertebrate Reproduction 3: 547-52. Elsevier Science Publishers, Amsterdam. 1984.

Disappearing Disease Not Inherited

So-called "disappearing disease" (DD) has been reported periodically over the past 125 years. The chief symptom is that strong colonies become weak and some colonies die. In both instances few dead bees are seen and populations decline over a period of several weeks. The problem has been observed by beekeepers in several states and even Australia. DD has not been restricted to any one time of the year according to those who have reported the problem. Several of us have wondered if DD was a real disease.

To study the cause of this problem colonies were collected at Ohio State University from several beekeepers who reported the disease. Under the care of those at Ohio State the colonies did not differ from colonies that were designated as controls. After three seasons of study it is reported by researchers below that: "From our data we can offer no support for the genetic hypothesis of DD."

What could cause colonies to decline? There are several possibilities listed in the paper below including the availability of food, diseases such as chalk brood, nosema and others, poor management and a number of environmental factors. The researchers found a great difference among the colonies as regards the amount of pollen they stored; this could in turn, have an effect on the number of young the colonies raised. It was also observed that some colonies produced much more honey than others. Some colonies stopped brood rearing much earlier in the fall than did others.

Another important result of this study is the conclusion that there is sufficient genetic variability among honeybee colonies in North America "to insure success of a breeding program." There is no need to import queens from abroad for breeding purposes. This idea of course, is not new but unfortunately there are still those among us to whom the old adage that "far pastures are greener" is true.

It was suggested several years ago by Dr. H. Shimanuki of the U.S. Department of Agriculture Laboratory in Beltsville, Maryland that the term, "disappearing disease" should be dropped. It has no real meaning. The study reported here confirms that thought.

Kulincevic, J.M., W.C. Rothenbuhler and T.E. Rinderer.
Disappearing Disease: III. A comparison of seven different stocks of the honey bee (*Apis mellifera*). Research Bulletin 1160. Ohio State University. Wooster, Ohio. June, 1984.

OBITUARY

Burel H. Lane

Burel H. Lane of Trumansburg, N.Y. passed away very unexpectedly on Dec. 3, 1983 at the age of 69.

Burel was a third generation beekeeper. His grandfather, Lamar Coggshall, owned and operated the largest beekeeping enterprise in the world at the turn of the century. His approximately 4,000 colonies in the Tompkins County area was a pioneering effort recognized internationally.

Burel was active in the organization and management of the Finger Lakes Honey Producers Cooperative in Groton in the late 1930's until it was dissolved in the 1950's. He was a manager of the coop for a short time.

Burel was a lifelong supporter, promoter and member of the Empire State Honey Producers Assn. He served as president of that organization.

In 1965 Mr. Lane became apiculturist for the New York State Dept. of Ag. & Markets. During his tenure as apiculturist, the apiary inspection team was able to reduce the incidence of AFB in New York State to below 1.0%, an accomplishment nearly unparalleled in the 50 year history of bee inspection. While serving as apiculturist, Burel also became president of Apiary inspectors of America.

The New York State Dept. of Ag. & Markets promoted Burel to Director of the Division of Plant Industry in 1972. He served in that position until he retired in 1979. He was president of the Eastern Plant Board and a member of the National Plant Board.

Mr. Lane is survived by his wife Ruth Hill Lane; three daughters: Elizabeth Rixford of Portland, Oregon, Margaret Burlew of Voorheesville, and Kathryn McDougal of Liverpool; two brothers: Roger, a lifelong beekeeper of Trumansburg and Florida and Andrew Lamar Lane, a retired superintendent and part-time apiary inspector.

Honey and Infant Botulism

By FRANK REISER/Associate Professor Nassau Community College Garden City, NY 11530

1. Exactly what is botulism?

Botulism is poisoning that results from the eating of a toxic chemical manufactured by the bacterium *Clostridium botulinum*. Formed as a by-product when this "germ" grows, botulin toxin is one of the most poisonous substances known. 500,000 times more poisonous than strichnine, it is estimated that one drop diluted by 8 million gallons of water could still kill an adult. The bacterium and the disease are named after the Latin word for sausage, botulus. It was in the center of unrefrigerated sausages that its existence was first discovered after a picnic with a sad ending led to a careful examination of stomach contents.

2. What is infant botulism?

Infant botulism is caused by the unnatural growth of *C. botulinum* in the intestines of a child. The toxic products of this bacteria are quickly absorbed into the blood and the child becomes poisoned bv its own feces. Botulin toxin effects the nerve function but not the brain. Paralysis begins with the face and proceeds to the arms and torso causing a condition described by doctors as "floppy baby". Proper medical attention almost always leads to complete recovery but 11 deaths since 1976 have positively been attributed to infant botulism.

Infant botulism is a recently discovered disease first noticed in New Jersey in 1975. It wasn't until a full study was released in the Journal of the AMA in May of 1977 that its existence became widely known.

3. How does infant botulism differ from the type of botulism referred to as food poisoning?

Adult botulism requires that the botulin toxin be eaten and consequently is known as food poisoning. In infant botulism the toxin is not eaten but produced by bacteria growing in the child's intestine. Adult botulism is not a disease but technically referred to as an intoxication. Infant botulism is the result of an organism that has invaded the intestine so it is technicaly an infection, a true disease.

4. Why are babies under the age of one susceptible to this disease and not older children?

Our intestines are teeming with bacteria on food residues that have not been digested. Studies have shown that ⅓ of the weight of our feces are the remains of these bacteria. There is a lengthy list of bacteria that can live in healthy people. *Clostridium botulinum* is not on that list. Like in all living systems organisms compete for survival. Intestinal bacteria are no exception, using enzymes and antibiotics in chemical warfare to exclude other types. *C. botulinum* is a poor fighter; in the adult human intestine it always loses.

Infants are not born with all of these organisms living in their intestines but begin to pick them up from their environment very quickly. Many are acquired during birth. It is supposed that, upon occasion, an infant may not have the proper balance of bacteria growing in its intestines leaving the door open should spores of *C. botulinum* be eaten. Avoiding bacterial spores is like trying to avoid taxes and eventually the infant will pick up a full set of organisms. To date there has been no instance of botulin infection after 26 weeks. To be safe, up to one year is proposed as the susceptible period.

5. Approximately what are the odds of a baby getting infant botulism?

From 1976 to 1983 there have been 395 reported cases with an additional 47 in the first six months of 1984. Not all states are required to report infant botulism statistics so the total number can only be estimated at 259 annual cases. With a birth rate well over three million, infant susceptibility to infection by *C. botulinum* is probably less than 1 in 12,000. This is an uncommon disease.

6. Why is honey blamed for transmitting this disease?

The spores of *C. botulinum* can be found in soil and dust all over the world. Any raw agricultural product may be carrying the spores and they have even been found in precooked frozen vegetables. These spores are absolutely harmless if eaten by anyone except infants susceptible to infant botulism. They are consumed every day and are totally inert. Infant formulas and baby foods have been sterilized and the mother should be following aseptic techniques of boiling bottles, pacifiers, etc. to reduce the possibility of transmitting any infectious organisms the the newborn child. Honey has not been sterilized. The Sioux Honey Association of Sioux City, Iowa, identified botulin spores in honey in the spring of 1978 and warned there is a possible risk factor in feeding infants honey. The Association must be commended for this self-sacrificing consumer effort.

The problem is not that honey contains more botulin spores than other agricultural products but that many mothers are unaware that honey is a raw product and use it to sweeten baby food and pacifiers. Although the occurrence of the disease is rare, honey has been implicated in about 40% of the cases in the spring of 1984, according to the Los Angeles County Health Department. If more people pureed vegetables to make their own baby food it is certain that the infant botulism warning list would be extended to a long list of products.

7. Is there anyway of telling if particular batches of honey may contain botulin spores?

Yes and no. There are techniques to determine if spores are present in samples of honey but the absence of spores in a small portion of a raw product can not be used to certify the entire batch is spore free. Culturing *C. botulinum* is expensive because they will only grow in the total absence of oxygen. Researchers tested many samples of commercial and local honey and found spores in only 15% of the samples.

8. Does filtering or pasturizing (heat treating) honey purify it by removing or killing the spores?

No. *C. botulinum* produces the most heat resistant spores known. Boiling at 212°F. a full six hours is required to ensure their destruction. Honey is pasturized almost 100°F. degrees cooler than than the 253°F. used for the commercial sterilization of canned goods. Temperatures this high would drastically change the flavor and color of the honey. Botulin spores are very small and can not be filtered out of honey even with pressure filtration and diatomaceous earth.

9. How do the botulin spores get into the honey?

Bacteria, yeasts and spores can be carried in the digestive system of the bee. Botulin spores, being in soil and dust, can also be carried on pollen and the hairy body of the bee.

(Continued on next page)

10. Is there any foreseeable way to make honey safe for all infant consumption?

Yes. to date very little work has been done with radiation sterilization but it has been demonstrated to be effective. Researchers have found that 0.336 mrad of gamma radiation will kill all of the botulin spores in meat. Radiation sterilization would have practically no effect on the color or flavor of honey and there is no residual radiation.

11. Is there any danger of botulism type food poisoning from eating honey?

Absolutely not. *c. botulinum* can not even be forced to grow on honey in a laboratory. Honey has a water concentration around 25%. *C. botulinum* grows poorly at 40% and not at all at 30%. There are some strains of this bacterium that grow on carbohydrates but they do better with proteins, which are very low in honey. In addition to these inhibiting factors honey contains lysozyme, an enzyme that inhibits the growth of bacteria which are gram positive as the Clostridea are.

Without the growth of spores no toxin is produced and the spores are totally harmless. Researchers fed botulin spores to 88 volunteers without finding the slightest evidence of any toxicity or intestinal growth. According to the Bacterial Disese Division, Bureau of Epidmiology, Center for Disease Control, Atlanta, Georgia, "The safety of honey as food for older children and adults remains unquestioned."

12. Is there any risk from using honey as a sweetener when canning foods?

Seventy percent of all instances of adult botulism have come from eating home canned foods. The food that is being canned is just as likely to be carrying botulism spores as the honey sweetener is. It is important that processing instructions as to pressure, temperature, time, acidity, and sugar concentration are carefully followed whether honey is used as a sweetener or not.

13. Many of the reported cases come from California. Is this area of the country more susceptible than others?

It's too soon to tell but probably not. *C. botulinum* can be one of seven strains. As dogs can be identified as to their breed by certain characteristics *C. botulinum* can be distinguished according to the type of poison produced. The most common strain, Type B, is found throughout North America and Europe. Type A is the most virulent form and is common in the western part of the United States. Types A and B are equally implicated in infant botulism with only one case of another strain being reported.

Botulism is difficult to detect and many laboratories are not equipped to work with this organism. California has been leading in this research and consequently has detected the most number of cases. Infant botulism has been reported from 39 states.

The susceptibility really lies in the child. Very few individuals are at risk, but for those who are, not using sterile techniques is playing Russian Roulette, waiting for the wrong spore to come around. Since it is difficult to avoid these spores, researchers must find a method for the early detection of susceptible infants.

14. What can be done to help assure the public of the safety of honey?

Botulism must be ranked with polio and typhus in ability to elicit dread in the public. Brief warnings on infant botulism in papers, magazines and on the pediatricians wall unfortunately associate the name "botulism" with honey but do not explain the whole story. Education is the best way to combat this bad press. Infant botulism is a new disease unfamiliar to just about everyone except pediatricians and beekeepers. Knowing the facts concerning this disease will remove doubts as to the wholesomeness of honey.

Following is a short list of authoritative references that can be quoted, shown to customers and, most important, cited in letters to editors. Poorly worded press reports which cast a shadow on the wholesomeness of honey should not go unanswered!□

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Bee Talk

By RICHARD TAYLOR
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There is a hint of October in the air now, even though that month is still weeks away. When I stopped into my apiary yesterday I thought, or perhaps imagined, the I sensed the first trace of goldenrod. The apiary is so secluded that one wouldn't suspect it was there until he drew close enough to pick up the hum of those thousands of small wings. Overhead the sky was the purest blue, as it is on cloudless, warm October days, and the bees were streaming forth and back across that opening overhead, as they do when the goldenrod is in full bloom. Obviously there is a honeyflow from something, as I confirmed when I peered into a few of the supers, so recently empty, and now filling fast with beautiful comb honey.

October is the transition month of the time of winter withdrawal. The bees are in a frenzy of haste to store the fall honey that is going to sustain them through those dark and numbing months ahead. And I'm not going to interfere much with that. When they have filled the supers they're working on now, and I have claimed them for myself, I shall not replace them with new ones to fill. The honey they get from then on will be theirs. It will not only get them through the winter in good shape, it will also nourish their young in the spring, and we'll all be better off, both the bees and I, for I shall then have strong colonies to gather my crop of honey next year. The bees need those winter stores. I do not. I shall be glad to see them converted to next year's crop.

Outside the door of my little cabin the bees make such a roar in the Vitex trees that one would think they were swarming. My diary tells me I bought those Vitex trees, three of them for five dollars, from the Pellett Gardens in 1977, as tiny plants that came in the mail. Two survived and bloomed for the first time last year. Now they are so large that I have to prune them from time to time in order to get in and out of my cabin. The bloom lasts for weeks. I wish I had ordered thirty seedlings instead of three. Someone had told me they might not survive this far north.

My cabin is itself a place of withdrawal. No one ever visits me there. It is as totally mine as anything could be, filled with my own treasures— an antique smoker or two, bee books galore, pictures that are precious to me and mostly meaningless to the rest of the world. I have had no need to compromise my tastes and preferences. I find my way out here before daybreak, while the world around me is sleeping. I walk through the wet grass in the summer and snow in the winter, to gather my thoughts, watch the sun rise, and be quite alone for the next several hours. It never gets lonely. On cold mornings my little wood stove is like a good and quiet friend, capable of driving out the cold very quickly. I may see my frosty breath for awhile, as I warm my back, but not for long.

My Honey Stand

The activity at my honey stand indicates that, as winter draws closer, the mood of my customers changes. In August the comb honey is a favorite, sometimes homemade bread when there has been time to bake it and set it out. Once in a while things from the garden, not needed by me, are left there as gifts, rewards for the trouble of stopping by. It creates good feelings. People do not expect generosity from strangers, and few can help feeling good upon finding something for nothing. But as fall approaches, as the frosts suddenly change the green of the countryside to reds and golds, my customers themselves begin to feel the impulse to a kind of winter withdrawl, to a time for laying in stores against the hard months ahead. Now it is the strained honey they buy, in increasing amounts, often in gallon containers, often several of these at a stroke for their winter supply.

I seldom see the patrons of my honey stand face to face, but we become friends of a sort anyway. A box of coins is there for them to make their own change. Once the stand is set up, my work there consists only of replentishing the shelves from time to time, and emptying the cash box before it becomes so filled as to be a temptation to the weak. I keep track of things, and there is rarely a discrepency. Honey cannot be sold that way everyplace, of course, but it works here in these parts — though I must add that I am never very far away, going about my work, when the honey stand is open and anyone contemplating theft could hardly help feeling that he might be being watched. The house, with its many windows, is not far away.

Signs up and down the road, a mile or more each way, some of them very large, announce the honey stand, and these signs become more numerous as time goes along. Having sold my honey crops this way for over a dozen years, there is by now no shortage of road signs to erect. I have an eye for anything discarded that might be converted into a honey sign, or indeed, to anything else useful to the art of beekeeping. This is the scavenger instinct, stronger in me than in most people. But you've got to have road signs if you're going to sell honey to passers by, especially tourists.

This year I had gotten my honey stand going again for only a day or two when a state highway truck pulled up, its occupants to advise me, no doubt, that my signs were illegal and that I must remove them. But no, the men were going up and down the highway replacing their **own** signs, and they had stopped at my place to see whether I could use some of the discarded ones, to paint them over and convert them to honey signs. I accepted a couple, and gave these thoughtful gentlemen each a free jar of honey.

Each day is different. Some are better, some worse, and each holds something unexpected. □

[Questions are welcomed. Please be brief and enclose a stamped envelope.]

Testing Your Beekeeping Knowledge

by CLARENCE H. COLLISON Extension Entomologist, The Pennsylvania State University, University Park, PA 16802

Whether you are a hobbyist, part-time or commercial beekeeper, there are many local, regional, state and national associations available for you to join and support, which benefit the beekeeping industry. These organizations are important to the beekeeper for educational, legislative promotional and social reasons. As with other commodity groups, we are not without problems, thus it is important for beekeepers to join together to seek workable solutions. Current problems that threaten our industry include: Acarine mites in Texas, record high honey imports, reduced apiary inspection in many states, honey adulteration and the migrating Africanized bee, just to name a few.

How well do you know your industry and the laws that affect it? Take a few minutes and answer the following questions to find out how well you understand this important topic.

The first five questions are true or false. Place a T in front of the statement if entirely true and a F if any part of the statement is incorrect. (Each question is worth 1 point.)

1. _____ Importation of adult honeybees into Canada and the United States from anywhere else in the world is prohibited by law.

2. _____ Two drugs are approved by the FDA for use to prevent AFB (American foulbrood) in the United States: Sodium sulfathiazole and terramycin.

3. _____ Zoning ordinances which prohibit or restrict beekeeping in a city or town are considered legal by the courts.

4. _____ U.S. Grade A honey cannot contain more than 17.5% moisture.

5. _____ Honey is packed and marketed in a wide variety of containers. By law, containers of 1 to 6 pounds must show the weight in both pounds and ounces.

Multiple Choice Questions (1 point each)

6. _____ Apiary inspection and laws are under the jurisdiction of the:

A) American Beekeeping Federation
B) State Dept. of Agriculture
C) Environmental Protection Agency
D) United States Dept. of Agriculture
E) Apiary Inspectors of America

Listed Below are acronyms for several beekeeping organizations. Please indentify each one with its correct name (Question is worth 8 points).

7. IBRA
8. WAS
9. ABBA
10. AHP
11. ABF
12. AIA
13. EAS
14. SSBF

15. The United States Department of Agriculture currently has six laboratories that specialize in bee research. Please indicate where these laboratories are located. (Question is worth 6 points.)

(Continued on page 549)

Nectar Collecting — Part IV

by J. IANNUZZI RFD4, Ellicott City, MD 21043

Some comments on plastic, glass, tin and boxes, the cradles of my nectars; on attractive labels and fancy prices; and on the funny honeys, including the "oils" and ginseng

Specifics of My Holdings

a. Containers and Contents. Successful collecting from 50 states and 33 nations has netted me 244.66 pounds of what the Hungarians call *mez*, the Finnish *hunaja*, and the Arabs *a'sal*, most of which can be found in my living room. All the contents are in glass save for five in plastic bottles, one in a plastic tub (Canada), two in tins (Greece and Egypt), one in a crock (Canada) and a single in a tube (Italy). Most (196) are one-pounders; nine are in grams (weight from 250 to 1,000) and 45 in American odd sizes (three to 40 ounces). All are liquid, except for three which are chunk and six creamed. About 30 of the originals are now in various stages of crystallization, at least a dozen of which have gone all the way.

b. Packaging. The tube honey was camouflaged in a cardboard box as was the "killer bee' sample which also contained an eight-page pamphlet entitled *The Killer Bees: A Documentary*. Seven of the items also came packed in "crates," ranging from one to three units each. Two of the French miels (from Paris and Tanneron—near Cannes) came with colorful seals, the destruction of which would indicate tampering.

Containers: My honey in whiskey bottles from Florida (B.O.), Logwood from Jamaica, and giant bee golden honey from Palawan, Philippines from Waynes Stafford, Ft. Wayne, Indiana.

c. Labeling. Most of the items are in the original containers; however, because of some odd sizes, both foreign and domestic, I have had to repackage several into one-pound queenlines, using the original label (a tricky process of removal, at times) or adding one of my own. On this question of bottle markings, the non-Americans seem to have it all over us when it comes to attractiveness and use of colors. My favorites are the ones from Mexico: Miel Carolota, Cuernavaca (where Charlie Mraz worked many moons ago)— a yellow label with three red flowers, one of which is being visited by a brown Italian honeybee with light blue wings; Vera Miel, Veracruz: a yellow label with black and red printing, showing a ladybee (a young girl in rosy briefs) with a crown and wings; perched on a blue flower, sipping nectar through a long straw; and Luna de Miel, Acapulco: a white label showing three bees collecting nectar in buckets, from orange and yellow blossoms with a fourth bee dumping its catch through a funnel in the top of a skep which a bearded Rip Van Winkle in a red-and-white checkered shirt is evacuating by means of a spigot, filling a gallon glass jar.

The London Crabtree & Evelyn stubby bottles are also very well done. The metal lids have a stick-on label indentifying the contents in three tongues (Miel — Honey — Honig) with a picture of a fruited apple tree next to a skep toward which the bees are flying; a tripartite English/French label giving the basic data plus a picture of the floral source and a description. For example, my Rumanian lime blossom gives the particulars in the first panel, the second displays a picture of the queenbee alongside a linden tree (basswood) showing four leaves and three sets of flowers, one of which has gone to seed; and in the third, the following description: *Miel de Fleurs de Tilleul: Les tilleuls des Balkans donnent aux miel que en proviennent ce bouquet incomparable: ceux de Romanie sont parmi les plus remarquables,* which is translated below as "The Linden tree of Eastern Europe produces a superb honey of unique flavour" but which I would translate as "The Linden trees that grow in the Balkans give honey an incomparable bouquet: that from Rumania is among the most remarkable.

Honey in a box: One of my two boxed honeys, Killer Bee from Brazil, donated by Dr. David Slater, Ellicott City, Maryland. My most expensive, selling at a rate of $10.27 a pound in December 1979. Booklet is behind bottle.

d. Prices. The lowest price sticker that I can find on any one-pound jar is "$1.27" (perhaps from the local supermarket years ago) while the most expensive items must be the Israeli and Italian and Brazilian (of course, I cannot vouch for those sent with the price eradicated). The 16 oz. Israeli orange blossom, packaged by Crabtree,

(Continued on next page)

I purchased in 1981 from Baltimore's Harborplace, the cynosure of the waterfront developed by the Rouse Company (also Boston's Faneuil Hall and Philadelphia's Gallery Place) for $7.25 (similar bottles had been hiked to $8.00) while the gifted $8.75 oz. Italian tube carried a mutilated sticker ($5.3?), indicating a per-pound interpolated $9.86. The only extracted honey coming boxed and with an explanatory pamphlet—Killer Bee, donated by Dr. David Slater, Ellicott City, the nectar connoisseur living a few blocks away who delights in placing his gifts unannounced in my jumbo mailbox—had the price label removed; however, I am convinced that is must be the most expensive for the following reason. On page C5 of the December 5, 1979 of the best biased newspaper in the country which I have been perusing daily for more than three decades, the pride of New York City revealed that Zabar's, the fancy delicatessen there, was selling that same honey for $3.69 a jar which, by interpolation, comes to a whooping $10.27 a pound!

The Packaging Experts

In discussing the specifics of my mellifluous mass, I need to digress to comment on packaging. Apiarists must be among the best in the universe. Not one jar, usually glass, arrived broken while only two were leaking ever so slightly. Newspaper was the most common stuffing, followed by crushed bags. Plastic bits were very prevalent. All arrived in cardboard except for the Kansas City, Kansas contribution from MAYNARD D. CURTIS. And I am sure that, in a plane crash during its journey here, it would have survived (all this reminds me of the gradeschool experiment which involves dropping an egg,

Honey in a box: My only in a tube, second most expensive in my collection, at $9.86 per-pound rate. Gift from Jim Steed, Richmond, Kentucky. From Italia.

suitably wrapped, from a helicopter, to prove to the assembled pupils the virtues of proper packaging). The editor from the Sunflower State's arranged—for contribution appeared in a half-inch plywood box nailed together, while the glass jar inside was cradled in fiberglass wads.

Editor he is. For more than 20 years, I think, he has been printing the 12-page Northeastern Kansas Beekeepers Association newsletter, *The Bee Buzzer,* read by more than 800 subscribers across the country, including one in Ellicott City and another in Richmond, Kentucky. A genial mixture of fact and fancy, prose and poetry, it is well done. Not even a state publication, I rank it at the top of all I have read coming from Georgia, Maryland, Michigan, Oregon, Pennsylvania and Washington. He needs to be thanked and congratulated constantly for the tremendous amount of cogital and manual labor that goes into such an endeavor—and only another editor would truly appreciate that. (He can be reached at 1861 N. 32nd Street, Kansas City, Kansas 66104, for only $5 per year. To prove my point try exchanging your state publication for his regional one.)

Another clever arrival was the two-piece pre-formed styrofoam plastic, in a slip case (similar to camera packaging) arriving from Kentucky.

The ace one-time packer must be JACK TUCKER, 5213 So. 76th Street, Tulsa, Oklahoma 74145. His glass was couched in a cardboard box, three inches deep, containing a solid piece of foam, sculpted to fit a queenline jar, covered with a three-quarter inch foam sheet. Very ingenious and very effective.

The Funny Honeys

a. Chinese Watercress. Among the most unusual in my horde is this oriental honey from Kwangchow, also a mailbox gift from my neighbor. Mostly in Chinese, the label does identify the floral source in English (I do have a set of Chinese dictionaries also) as well as carry this phrase: "Concentrated Honey." Of the more than 200 containers in my house, this is the only one attesting to the sugar content, but it is the most watery of them all. It almost reminds me of my kilo can of Egyptian nectar: it was the only one to arrive with an enbalmed Italian honeybee (both nations were trying to attest, in different ways, to the genuiness of their product?????).

b. Hungarian Pollen Honey. The next most quixotic comes from the land of the Magyars: it is the only one that is honey mixed with pollen. The gift of my niece whose father fled during the days of the Freedom Fighters, she purchased it for about 130 forints ($3?) in the summer of 1983 at Pusztavacs where the Beke (Peace) Festival was in progress, from a flea-market type set-up where several nectar vendors were in operation.

c. Ginseng. Distributed by the American Ginseng Company, Chicago, Illinois, my jar of "Honey & Ginseng" comes with slices of American ginseng root (*Panax quinquefolium*, filling half of the one-pound container, on sale for $7.50 (regularly $8.95). (As an apiarist surely knows, this expensive root is reputed to have certain aphrodisiac powers, for which I cannot personally vouch.) This freewill contribution also originated in Richmond, Kentucky from where also were mailed my German acacia, French all-flowers, Puerto Rican coffee, and Honduran unspecified.

d. The Oil Honeys. The last of the funnies are those sold by Draper's Super Bee Apiaries, Millerton, Pennsylvania—and the man who owns the Strauser franchise on the Eastern seaboard as well as in the Midwest. My four one-pounders are labeled: "Honey with the Natural Oil of. . Tropical Fruit, Cherry, Raspberry, Cinnamon," with the honey itself not specified (probably clover). One can actually taste the additives, made possible by the generosity of the man from Kentucky.

The Sourwoods

Then there are the suspicious mels bearing the name "sourwood," often called the "queen of honeys" and perhaps the most expensive stateside. Mine originated in the Keystone, Magnolia, Old Dominion and Volunteer States. The first was picked up from a local fruitstand with only the word "sourwood" on the label. The seller said it was from Pennsylvania. The second I

(Continued on next page)

purchased from a roadside stand near Myrtle Beach on July 25, 1980—a pint jar with comb bearing this label: "Anthone's Syrup Co., Rt. 2, Box 356, Philadelphia, Miss." for which I paid $2.50. The third is a gift of 40 ounces of chunk honey from Ararat, Virginia. The only sourwood I am certain of is that which I first purchased from STEPHEN H. DILLEY, Nashville, Tennessee at EAS New Jersey 1981 and then again at EAS West Virginia 1982.

The point I am trying to make is: When is 'sourwood' really that? When purchased from the honest beekeeper himself.

One must be careful in buying this sticky stuff. Although the tree grows from Mississippi to as far north as Ohio and Pennsylvania, one is most likely to find the delicacy available principally in North Carolina. Even so, much of the 'sourwood' there is said to be clover, brought in from

Containers: Only two honeys in my collection with anti-tampering seals: Swedish Honung and German acacia, gifts of honey pot collector, James Steed, Richmond, Kentucky. Bottom honeys are the only ones with fancy cloth covers, from Paris and Tanneron near Marseilles, gifts from J. Steed.

Michigan, Mississippi or elsewhere and mislabled, according to the main newspaper in Asheville, North Carolina. So you bought your sourwood in that state before July first one summer? No way. One of the latest blooming, honey-producing trees, about July 1, the harvesting is not done until about a month later. So your investment was made in that state in August 1972, after the extraction? That year "was a real calamity, a complete disaster," according to EDWARD FOWLER, the 78-year-old master beekeeper from Chasiers Valley, who has been keeping bees for more than a half century, specializing in the sorrel tree, also called "sourwood." "It was the first year my bees ever failed to make sourwood. There wasn't a drop of honest-to-goodness sourwood honey to be had anywhere."

Heather Honey

Not really a funny honey but a *sui generis* must be my pure heather honey from North Wales, purchased on a vacation trip by my sister-in-law DOROTHY MARIE IANNUZZI from the world-famous Harrods of London, the scene of the disastrous terrorist Christmas car-bombing, a blast which killed six and wounded 94. Dark brown, it appears solid but taste reveals no crystals—only a gelatinous mass. About this nectar, my Gettysburg sister sent the following clipping:

The famed heather honey of Europe is so thick it will not flow out of a jar turned upside down. If it is shaken, however, the honey will pour easily. The phenomenon has a name—thixotrophy [from Greek words meaning "touch" and "food"]—and is common to certain jellylike substances.

[Next month — the best and worst-tasting; more contributors by name; costs of collecting; complete listing of domestic and international nectars.]

OBITUARIES

LeRoy Rufer

LeRoy Rufer, who went by the name of Roy in the last few years, died July 17, 1984 at Blair, Nebraska. He was a commercial beekeeper for 36 years.

Roy was born to Edward and Minone Rufer of Nashua, Mn. on October 19, 1916. At an early age he began working on various farms.

He was united in marriage to Irma Keindt on November 12, 1941. They farmed near Tuntah, Mn. until 1948 when Robert Ray of Tuntah, Minn. employed him and his beekeeping career began. In a short time he became Mr. Ray's manager and was instrumental in building that outfit to one of the largest in Minnesota. His wife preceded him in death in 1964. During his 24 years with Ray's Honey Company, all three of his sons were eventually employed and assisted him during the harvest season.

In 1972 Roy moved to Kennett, Mo. and managed the Robins' Apiaires there. He was featured in a 1979 publication of *"Some Beekeepers and Associations, Part I"* which was written by Joseph O. Moffett. The article was published after his employment with Robins' Apiaries.

Although Roy didn't own any bees of his own, he worked bees as if he did and proved to be an asset to the beekeeping industry producing many excellent crops over the years.

Roy passed his love of beekeeping onto two of his sons. First Terry who joined him at Kennett, Mo. and later Darrel in 1975.

Terry left and is a commercial manager of the Honey Land Apiaires in Tekomah, Nebraska. In 1977 Roy moved there to assist him in the honey production there and was remarried to Pauline Densmore on June 28, 1980 and they resided in Tekamah.

Darrel moved to Delano, Minnesota and began his own business as a commercial honey producer and is currently owner and manager of Rufer's Apiaries and Delano where Roy frequently visited and assisted during his recent retirement.

Roy's funeral was held at his hometown of Tuntah on July, 21, 1984, where many of his friends and family attended.

His other son, Roger, resides in Plymouth, Minnesota and his daughter Sharon, lives in Eagan, Minnesota.

Inspired by the bee, he too, believed in working hard and striving to be all you can be.

His pride made him a master of his craft. His craft made him master of himself.

Charles A. Cavett

Charles A. Cavett died May 30, 1984. He had gone to his bee yard and apparently was lighting his bee smoker and got the grass on fire and burned his supers and what bees he had in his yard. He tried to put the fire out and had a heart attack. Charles was born December 18, 1901 at Stockham, Nebraska. He graduated from Phillips Highschool and from the University of Nebraska with a degree in Geology. He worked as a chemist in Utah before coming to Bayard in 1929. He married Lillie Fiscus, October 14, 1936 at Alliance. He raised registered angus cattle and worked as a chemist for the Great Western Sugar Company at Bayard.

Survivors include his wife; his son Bill of Alliance; four grandchildren and six great grandchildren.

FIRST FLIGHTS!
NEW PRODUCTS COLUMN

BEE KING RING/MODELS

Above are three of ten colorful little bee doo-dads, suitable for ornamentation or use on key rings. In addition to the nurse, guard and queen bees, there is a musician, cleaner, baby, gatherer bee, and several others. For further information contact:

Chris Morris
MORRIS BEEKEEPING SUPPLIES
Morants Court Rd.
Seven Oaks
Kent TN13 2TR -- UK

BUCKET BOAT BEE FEEDER

This perforated foam pad enables bees to land on the surface of sugar syrup within a five gallon bucket. The material it is made of has been designed to last many years. For additional information contact:

Sweetwood Honey
Ted Podlewski
3422 Washington ave., No.
Mpls., MN 55412

Other Introduction Cages

by P.F. THURBER 5522 127th Ave. N.E. Kirkland, WA 98033

There seems to be controversy as to who invented the twin tunnel cage. One name I have heard is Chantry who was alive, well, and running a commercial outfit in Utah back in the 1930's at which time I am told he was about 50. If he invented the twin tunnel cage at the age of 25 or 30, then yes they date back 75 years. That ties in with other information I picked up verbally. Anyway his design was shown in a pre World War II issue of *Gleanings* or the *American Bee Journal,* and so I made a couple. The twin tunnels are drilled in a rectangle of wood and then to

Original Chantry queen releasing cage. Note excluder strip over short tunnel.

shorten one tunnel, you slice off a corner of the rectangle where the tunnels are drilled. The holes incidentally are 3/8" diameter, and after you finish the cage before you install the excluder and screens, you dip it in hot wax so the dry wood does not suck moisture out of your queen candy and dry it out. The excluder is easiest tacked into place with a brad driver, (one is sold by Root and is in the catalog page 13). Use 3/8" brads. Incidentally to put the queen in a Chantry cage, one screen is held in place with one thumb tack and you pivot the 1/8" mesh to provide a place to stuff in the queen. Do these work? You bet, but you have to remove two frames to use one and that leads to brace comb which can be a nuisance.

Despite the fact the original Chantry design worked, I did not like them very much. I wanted something better so I started fooling around, and made twin tunnel cages from 3/8" marine plywood. All I did was make two slots one quarter of an inch deep. One slot was made a quarter of an inch wide, and the other a little over 3/8" wide in a long strip of plywood. Then I cut rectangles and then cut a notch to shorten the wide tunnel. Then I used the brad pusher to fasten a piece of excluder in place. Using another piece of the same strip of plywood as a form, I bent a piece of 1/8" hardware cloth around it, and peened over one end of the rectangle tube so formed, and finally held the rectangular tube together so it could be soldered. The wood, of course, I dipped in hot wax. After filling the tubes with candy, I slit the insert part way in but left a space into which I could push-in the queen. In use I find bees can not be trusted! The little varmits stole the candy from the tunnel by gnawing through the 1/8" hardware cloth. OK, I am smarter than a bee (this is a controversial statement?) so I covered the tubes with cellophane. Hey, those are good cages and easier to make I think than the original Chantry design. Also they are thinner so you do not have to remove frames to use one.

Thurber design Chantry principle Queen Releasing Cage dissassembled on left, assembled on right.

Commercially made twin tunnel cages or the equivalent have been made. The best I have seen is the IDEAL cage patented Dec. 13, 1927. It is steel and was, after punching and forming, hot dipped in tin and then the excluder piece was soldered in. Currently, an IDEAL cage will sell for upwards of ten bucks because they are museum pieces. However, the U.C. Davis bee lab had a goodly supply which were, and I suppose, are still regularly used. Unfortunately the Ideal cage manufacturer was a casualty of the great depression. If someone wants to have them made in Hong Kong and sell them, I suppose I would furnish a sample because they are a good cage.

The Wrex Products, Inc. 233 Myers St., Chico, CA 95926, got approached to make a twin tube all plastic introduction cage.

"Ideal" Chantry principle Queen releasing cage. Disassembled on left. Assembled on right.

And you will note it has a removable candy insert so you remove and fill it with queen candy then slip it into the cage and fold up the other end. Push in the provided plug and poke a hole in the plug. Now the Wrex cage has an ingenious design in that the bees eat the candy till they come to a slot which acts as an excluder which lets the bees into the compartment where the queen is to release her, they have to eat more candy which when consumed opens another hole allowing the queen out. Just because someone will ask I will tell you no one seems to know why the Wrex cage did not go over. It is strong, light, easy to sterilize to reuse. It stacks with air space so it can be used as a shipping cage, etc. Wrex last I heard still has the dies and will make them but they want meaningful orders which I guess means they will not produce them unless and until someone wants say a 100,000 or more.

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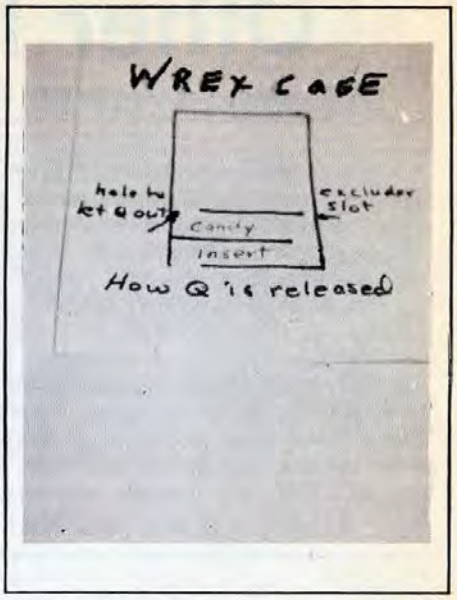
The final twin tunnel cage with which I am familiar is the Worth cage designed by an English gentleman named Worth. It has as you can see in the photo, a piece of wood that slides into the rectangular hardware cloth tube and into the short side of the wood there is a blind staple (as in roller blinds — we call them window shades; the old pull down kind with a spring to pull them up again). Incidentally, I am pretty sure Walter T. Kelley sells the blind staples or did. Well anyway the idea is you push the queen candy into the spaces on each side of the block. The bees eat through the short tunnel first, etc.. Frankly I do not like the Worth cage. It is hard to fill the tunnels and the bees steal candy through the hardware cloth. Also, as received from England, it is made, I think, wrong. The overlap meets and is soldered at the edge, which I think makes it harder for the bees to feed the queen on that side of the cage. I think my own Chantry type cage is better anyway so why put up with the Worth cages or import them? None the less, they are used extensively in England.

Miscellaneous: A plastic queen cage is made and available somewhere in Ohio. I was not impressed with the design. It is no better, I think, than a three-hole Benton cage.

In Europe you can go into a tobacco shop and buy a pipe cover which keeps ashes from being blown out of our pipe while you ride a bike or drive in a convertible with the top down or you can buy pipe covers at most major bee supply firms in England and Germany. In an emergency you use them like a push in cage, but since they are only about an inch in diameter I think I would make my own push-in cage because I think the big push-in cages work better. Actually the pipe covers are mostly used to keep the queen where you want her while you work a hive.

In England at least, and I think Europe, and I know in South Africa beekeepers use plastic hair curler tubes. Not all hair curlers will work, but the ones with the small holes in the cylinder will. One end is plugged with a wine cork (let it air till the alcohol fumes evaporate) and then you push in the queen and another cork or half a cork is put in the other end. The queen is thus stored just as she would be in the original Miller cylindrical "Penny" cage which was just a cylinder of $^{1}/_{8}$" hardware cloth with plugs at both ends. When using the Penny cage or the hair curler tubes to introduce queens, one drills a $^{3}/_{8}$" hole in a piece of dowelling about ½" long then dip it in hot wax and then fill with candy. The bees release the queen when they eat the candy. You can also cover one end with four to six layers of newspaper, and the bees release the queen after they chew through the newspaper. I am told bees do not pro-



Wrex cage and insert. Poke holes through caps before putting Q in one. White on white did not photograph well. Sorry!

polize or wax the hair curler tubes.

Well I trust now you know more about queen cages than you really ever wanted to know, but I hope at least that if someone starts to talk about queen cage variations now you know what they are. I aso hope you — just for fun and to improve your knowledge of beekeeping — make up some of the cages and try them out. Make your selection of the cage you like best and are most comfortable with.

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MICHIGAN BEEKEEPERS WINTER MEETING

Roger Hoopingarner from MSU will cover timely topics of honey promotion and wintering of the honeybee colony at the Michigan Beekeepers Assoc. meeting, November 2 and 3 at the Holiday Inn, Alpena, MI 49707.

John Dreves of the Michigan Dept. Of Agriculture will be giving an update on mite infestation.

Dave Severson, from the USDA bee lab in Madison, WI, will discuss aspects of winter consumption as well as pollination ecology and nectar secretion findings.

Bill Miskoe will be holding a question and answer session on the Miskow fumigation chamber.

Honey for competition must be in by 1:45 on Friday. Three enteries are required for each category with a $1.00 entry fee for each.

Banquet reservations are $13.00 per person and must be in by Oct. 27th. After that date there will be a $2.00 surcharge.

VITEX OFFER

From Kerry Box, of Box's Better Bees in Mt. Plesant, Texas, comes this offer:

We have a quantity of fresh Vitex seeds that we would be most willing to share with our fellow beekeepers. We ask that a $2.00 donation be made to the Texas Beekeepers Association and that you include a business-sized, self-addressed, stamped envelope with TWO stamps on it. In return we will send a packet containing approx. one and one half ounces of Vitex seeds and cultivation tips. Please make checks out to TEXAS BEEKEEPERS ASSOCIATION. All monies will go to the Reward Fund to help pay the Association's reward for information on bee vandalism or theft of member's bees and/or equipment. Please feel free to order as many as you want but be sure to send sufficient postage. There have been several articles recently on the Vitex *(Negunda Incisa)* **plant. We have made extensive plantings here in N.E. Texas and are beginning to see appreciable surpluses stored here.**

BOX'S BETTER BEES
410 N. Lide St.,
Mt. Plesasnt, TX 75455.

Painting With Beeswax

by MARY LOU and ROGER MORSE
Department of Entomology Cornell University Ithaca, NY 14853

Encaustic painting is a system of painting on canvas, wood or some other medium in which wax is the chief ingredient. The pigments are mixed and blended with the wax when it is hot. In times past a small amount of resin was sometimes added to make the final product stiffer. When the painting is finished it is exposed to a low heat so that the surface is made smooth. It is from this "burning in" that the word encaustic derives. The final painting may be polished with a cotton cloth so as to produce a fine sheen.

In ancient times, painters who used the encaustic painting method had a metal pallet which was kept over a pan of charcoal. Under ideal conditions, the pallet was kept just at the melting point of the wax. Today's encaustic painters use electrically heated pallets that are thermostatically controlled. The pallet knife that is used to apply the molten wax may be electrically heated too. When the fork is finally ready to be burned in, it is placed under an electric lamp though infrared lamps are more popular. One must be careful not to overheat the finished product or the colors will run.

Encaustic painting was invented by the ancient Greeks and Romans and was widely used by them about 2,000 and perhaps more years ago. At that time beeswax was the only wax available. Artists that use the system today may add waxes that have a higher melting point. A modern day favorite is carnauba wax that has a higher melting point, about 181-185°F as opposed to 145-148°F for beeswax.

Carnauba wax is produced on the leaves of palm trees that are found in northern Brazil. The heavy coating of wax protects the plant against excessive loss of moisture in the hot, dry, climate. Other plant waxes are sometimes used too. Another favorite is candelilla. It is produced by a desert plant that grows in the drier parts of Texas and Mexico. It, too, has a higher melting point as does microcrystalline wax that is also sometimes employed.

One might logically ask about the permanence of encaustic painting. Beeswax is so pliable that one would think that it would deteriorate with time. However, the excellent condition of a great number of encaustic paintings, especially from the Egyptian tombs, testifies to the contrary and indicates that these paintings have as long a life as any oil paintings, perhaps longer. The surface of an encaustic painting can be easily scratched and damaged, but so may that of an oil. Encaustic paintings, unlike oil paintings, appear to repel dust rather than to attract it. The final work need be varnished and if given the care that any piece of art deserves will obviously last for a long while.

II Century A.D. Portrait of an Egyptian man (from a mummy) encaustic on wood.

Some of the finest encaustic paintings we have seen are found in the Egyptian Museum in Cairo. These are life-size portraits on wood and date from about 60 to 230 A.D. They are from the Fayoum area of Egypt. We counted over 50 in Room 14 of that museum.

At that time in Egypt it was still popular to mummify the dead. However, in that part of Egypt it was also common to prepare a life-size portrait of the deceased and to place it over the face of the mummy. The portrait was held in place with some of the bandages that were used to wrap the mummy.

For several thousand years in early Egypt, it had been popular to paint only one side of a face. The artists from the Fayoum area broke with Egyptian tradition and painted the full face and thus we have the fine paintings that are on exhibit.

There is some controversy among the artists as to how the colored waxes were applied to the surface. However, most agree that the pigmented waxes had to be heated before being applied and that they may have used brushes as well as knives in their application. One author has suggested that both the bristle end and the blunt end of the brush may have been used in making the painting.

After finding the above encaustic paintings in the Egyptian Museum in Cairo, we were told that more existed in the Coptic Museum in that city. Also, according to Crane (1978) there are a large number in the British Museum in London. The portrait that is reproduced with this article is from the New York Metropolitan Museum of Art. It was attached to a mummy from the Fayoum area.

An interesting aside is that the arguments that have existed over the origins of the ancient Egyptians. The physical features of the people in the Fayoum area are carefully defined as a result of the encaustic paintings that have survived. However, these people were also under occupation by the armies from Rome and no doubt there was a great deal intermingling of peoples as there was of cultures.

Encaustic painting is a little know art form. We have been very much impressed with the quality of the paintings we have seen and write here about the methods so as to encourage beekeepers who might care to develop another small outlet for their products through encaustic painting.□

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Questions and Answers

Q. We had a 90% eclipse about 12:30 p.m. on May 30, although it was entirely obscured by solid cloud cover and rain. In spite of the light rain, my bees were flying that day, except for about an hour before and a half hour after the scheduled eclipse. During that time there was no activity, other than an occasional bee venturing from the entrance and immediately returning. Was this due to the absence of polarized light? Would it have been the same on a clear day during an eclipse? **R. Lee Beam, Winonah, NJ**

A. It is known that bees navigate over long distances being guided by the polarized light of the sun, and they do this even when the sun is obscured by clouds, and further, that they are badly disoriented when this polarization is seriously interfered with. I believe, therefore, that it was indeed the invisible eclipse that reduced your bees activity, and that the result would probably be the same even on a clear day under conditions of total eclipse— although I know of no actual confirmation of this. It is an interesting idea.

— Richard Taylor

Q. I usually treat my bees with terramycin the first part of July. Can I do this when there are half filled comb honey sections still on the hive? **Daniel D. Miller, Aberdeen, MS**

A. No. Nothing, not even sugar, should be fed to bees with supers on the hives, even empty supers. Certainly no drug should be given to them when they are storing nectar in supers. Nor would there be any point in doing this. Terramycin should be used only to prevent foul brood, not to try to cure it, and the time to prevent it is early spring. Scatter a quarter teaspoon of terra mixed with a tablespoon of powdered sugar over the frames at one-week intervals for three weeks in early spring, and you will probably never see a case of foulbrood, either American or European.

— Richard Taylor

Q. I lost a colony to nosema last spring. I still have several frames of capped honey from it. I would like to disinfect the hive with acetic acid. Can I give these frames back to the bees after the disinfection without contaminating the colony? **Jan Kurdwanowski, Garfield, NJ**

A. Equipment can be fumigated by soaking a pad with an 80% solution of acetic acid, placing it over the hive, and leaving the hive and equipment sealed for a week or more. It is doubtful whether this would have any effect on capped honey, however. A strong colony can often cope with nosema, under the right conditions, without fumigation or medication. Have the colony up off the ground, in a dry, sunny location. As it builds in strength, free from stress, the signs of nosema will disappear. I believe your frames of capped honey could be given to a good strong colony late in spring without danger, without fumigation.

— Richard Taylor

Q. I started some colonies from two-frame nucs this year. How late can one make up nucs and have them build up strong enough to get through the winter? **Jeffrey Hamelman, Brattleboro, VT**

A. You should have used three combs rather than two to make up those nucs. Even so, a nuc is very unlikely to build up strong enough to survive a winter in Vermont if started later than mid-June, and it might need a gallon or two of sugar syrup in September at that. I once started some nucs on June 21, and they did not make it.

— Richard Taylor

Q. Will the bird repellent spray used on blue berries affect my hives? It is known to be toxic to bees, but is sprayed on the berries, not on the bloom. **L.E. Martin, Edgemont, Ark.**

A. I am entirely unfamiliar with bird repellent sprays, but in general, there are only two ways that sprays affect colonies seriously: (1) By being applied to plants that are in bloom, so that bees carry toxic substances back to the hives with nectar or (more commonly) pollen, and (2) by being applied in the vicinity of hives, so that they drift into the entrances. I doubt that the mere presence of toxic substances on plants that the bees were not visiting would seriously affect them— but again, I am not speaking from experience here.

— Richard Taylor

Q. I am able to produce comb honey fairly well in my area, but have trouble getting it sold. Have you any suggestions? **George J. Balzer, Williamsville, NY**

A. Unlike extracted honey, comb honey does not sell well from grocers' shelves. Too few people know and appreciate what it is. But it does sell well from roadside stands, especially those visited by tourists. If you cannot set up a stand of your own, leave your comb honey, on consignment, at fruit and vegetable stands. If it is of good quality you have a steady market there.

— Richard Taylor

Q. In late July I found a small patch of worker brood in an extracting super which had been over a queen excluder since early spring. I have read that worker bees sometimes carry eggs through an excluder for queen cells. Is this what happened here? **W.R. Kreitzer, Lexington Park, MD**

A. Reliable observers have indeed reported that worker bees will sometimes place eggs, which have been brought from another part of the hive, in queen cells, thus accounting for viable queen cells above an excluder, but I am quite sure that no patch of worker brood, however small could have such an origin. The queen squeezed through the excluder, laid some eggs, then returned— a difficult thing for her to do but not, I think, impossible, especially for a small queen.

— Richard Taylor

Q. I have recently purchased 30 colonies of bees to make another apiary. These hives did not have the honey harvested from them last year. How can I get the granulated honey from the combs? **Glen Kraus, Mendon, Utah.**

A. Don't try. It's not worth it. You'll be further ahead leaving the granulated honey for the bees to winter on and build up in the spring of '85, meanwhile harvested the honey they put up this year. That granulated honey in the hives is your investment in future crops. If you want the bees to clear the granulated honey out of each of the combs faster, then wait until spring and then put the supers of granulated honey at the bottom, underneath the brood nest.

— Richard Taylor

Gleanings Mail Box

Slatted Racks

Dear Editor:

This comment is in relation to my comments on "the slatted rack" in the April 1984 issue.

I recently (early May) installed a swarm into a new brood chamber with wired foundation in new frames from a different manufacturer, the b/c was made locally. This was installed on one of my old bottom boards and slatted rack.

Several days later, I inspected the hive and found, the foundation was cut from the foundations perpendicular wires on five (5) frames. The comb was drawn out between these cuts; brood, pollen and nectar was in them.

I took this b/c off, took off the slatted rack, inspected it, and found it was built up on the backside of top edges on these slats (making the slats "L" shaped instead of flat).

I figured "offhand" that the bees "climbing distance" from the slats to the bottom of the frames was too much. So, the bees took this wax and added it to the slats to make a road to the frames, now they make "mounds" on the bottom board to reach the frames, so why not add to the slats? I haven't had any "mounds" on the b/boards used with the slatted racks.

So, the "standard distance" was "off" between the slats and the bottom of the b/c or the bottoms of the frames were too high up in the b/c. I discounted my s/r, as I had used it on my other b/c OK.

The s/r's that I use, have two (2) "runners" nailed on the edge to the bottom of the slats, front to back so the bees have four (4) additional roads, besides the walls of the b/c to climb the slats; then they reach up and climb onto the frames from the top of the slats, therefore, no mounds or added wax.

By the way, it's best that these "runners" do not rest on the floor of the b/b — due to moisture, expansion and rot and air flow (be sure not to exceed the "bee space" distance).

Voron H. Baughan
2321 David Lane
Chattanooga, TN 37421

The "Hand Full Club"

Dear Editor:

The 1984 Honey Crop will soon be the topic of discussion for beekeepers. Yard locations, weather conditions and crop averages makes fascinating conversation for those of us involved in the industry. I'm certain many honey producers will have an opportunity to "brag" about their averages in 1984, but there I go with my faith and optimism!

Now—what have you done to promote your product and industry in 1984? For a dozen years I have urged persons involved in the industry to invite a Honey Queen to their area. We have an effective promotional program in operation! A "Hand Full" of people man the program and a "Hand Full" of people take advantage of the program!

There are local, state and national Honey Queen recipe folders available. If you have these on display on the store shelves in your area, you are material for the "Hand Full Club"! If you haven't, you have already missed an opportunity to increase the consumption of honey locally.

The 1984 American School Food Service Conference is now meeting in Indianapolis. I'm taking the opportunity to write this article from this location. My enthusiasm for promoting honey will never diminish as long as I find interest in using the product on the table at home or in the School Lunch Program.

There has been a question presented to me by the young women who have been involved in the promotion of the product and industry for a three year term as local, state and American Honey Queen. "How do we approach the producer and packer and make them aware of what has been accomplished through the Honey Queen Program and how much more could be accomplished with more interest?" I have come to two conclusions!

#1 Many of you feel if this "Hand Full of people is dumb enough to carry the load, let them go ahead and do it!

#2 You don't give a dang!

This letter does not stem from lack of interest in promotion! I will never lose that! The lack of interest on the part of 95% of persons involved in the industry has, after a dozen years, prompted me to arise at 4:00 a.m. and contact the 5% who will read the letter and continue to "Bee a Promoter".

If you are interested in belonging to the "Hand Full Club", contact me! WE ARE ORGANIZING!

JoAnne Weber
Beekeeper, Packer, Promoter
Route 2
Clayton, WI 54004

Songs of Beedom

Dear Editor:

A song book with the above title should provide L.M. Bravo (p.407) with the Miller songs she requested. He wrote some of the music along with G.W. York and J. Roat. The latter two gentlemen and E. Secor were the "word authors" for the 10 songs that included "Bee-Keepers' Convention Song", "Buckwheat Cakes and Honey", "Dot Happy Bee-Man", etc.

Half of the plates were provided by the A.I. Root Co., and three of the songs were included in *The Honey-Money Stories* (1905) edited by Earl M. Pratt. The Johansson bibliography (1972) indicates that the nearest source of these volumes to San Francisco is the University of California at Davis.

Toge S.K. Johansson
R.D. 1, Box 256A
East Berne, N.Y. 12059

Diseased Bee Trees

Dear Editor:

Since my comment on disease in bee trees (p. 408), I found a letter from Michigan's chief bee inspector (H.M. Krebs) published in the 1929 *Bee Hive* (7(2): 5). He considered the menace of bee trees to be almost nil, since the approximately 200 trees cut by inspectors were free of disease; 13% of beekeepers' colonies were infected with American foul brood.

Toge S.K. Johansson
R.D. 1, Box 256A
East Berne, N.Y. 12059

Continued on page 551

GRIZZLY

by THE OLDTIMER

I'm sure Abraham (Abe) Penner would not have related the following bear story in its entirety, without a certain amount of goading (throughout its telling) from the four of us. Come to think of it, probably not even any of it would have come to light if it were not for a young artist with a yen to draw wild creatures from photographs. Anyway, to begin at the beginning, as it were — a little over a week ago, Abe and I drove down to his sister's place in town with a load of honey and a number of cedar fence posts. Canning season had just begun and with folks there-abouts more and more concerned with the detrimental effects of sugar, honey is in great demand. We decided to take my flat-deck truck instead of his pick-up, which, when we had installed plank side rails, could more easily handle such a diverse cargo; you see — along with whatever we are carrying, there is always our regular trappings (survival gear, chains, axe, saw, rations etc.), which it pays to have when moving about in never-never land. As a matter of interest, Abe lives alone with two goats and 35 colonies of honey bees just west of Orange Valley, a hamlet on the Caribou Plateau. This self-dependent community consists of some seven families — with four more (including our son-in-law) strung out from one to ten miles away on the road in and gets its name from the many cliffs and rock formations of this reddish-yellow hue which abound in that area.

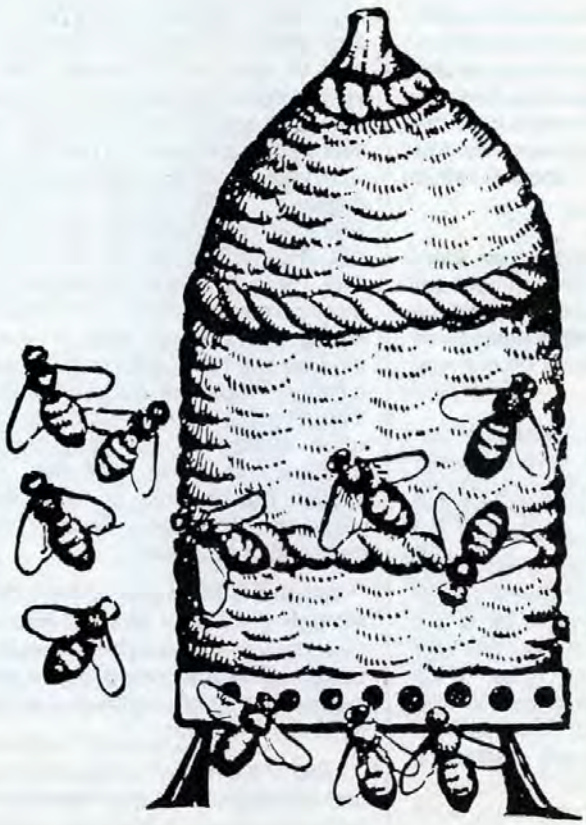
We rose early the day of departure (loaded vehicle an indistinct blob just out from the cabin door) consumed a prodigious breakfast and long before sun-up were chugging down 'main' street on our way south.

We moved along without incident — that is, if you don't consider several moose crossing in front of us at one point, with no intention of giving up their 'right-of-way', and farther on, two more of these big animals trotted ahead of us for more than a mile before plunging over a bank and into the dark waters of a small lake; and a bear scratching his back on a tree (he kept his feverish activity without pause, as we passed) and ducks and geese by the thousands as dawn broke. The mist had all but dissipated when we reached a height of land three or four hours out — and stopped. While Abe prepared to build a small fire for tea by a sparkling brook I scrambled up to a better vantage point from which I could take a few photo's of our back trail. Hundreds of feet below me the white ribbon of road (my favorite throughout this lone land) appearing and disappearing in the forest wound snake-like for miles until vanishing completely around the base of a distant mountain. Dark green slopes coursed sharply upwards from this narrow valley floor ending in pure white snow-capped peaks. Bodies of water, reflecting blue skies, dotted the lower landscape — while out-pourings by the hundreds produced glittering, eye-catching streaks down emerald mountain sides. A Dogwood tree — its plate size, snow white blossoms a spectacular splash of colour amid its dark green surroundings, clung to a sandy slope — and it came to me that there are things tucked away in remote places which have never been seen by man. The beautiful plant, for instance, and another which I just caught sight of through willows up a dry water course, can only be seen from the very spot where I stand in this million square miles of wilderness. This is a sacred spot — sun-dappled earth and rocks — grasses, alders, willows, pines, and peering closer I perceive dandelions, yellow lady slipper, columbine, fireweed and a host of other showy flowers; red, pink, yellow, purple and shades in between — they're all around me. I know but a few of their names and even the best of cameras would not do justice to such a breath-taking display — ONE MUST BE HERE, TO BREATH THE VERY AIR AND ABSORB ALL THIS WITH EVERY FIBER OF HIS BEING. I always have trouble tearing myself away from such places — and not all of me leaves. —There you have it — a view through one mans eyes of the ultimate in creation — however, my heart sinks at the thought of the day which is surely coming, when civilization with its pollution will overflow into these soltitudes, turning pristine reaches into an ugly, scrubby waste and desolation — I see an ominous message in progress.

The aroma of campfire smoke drifting up through the knotty pines interrupts my revèrie — so with a sigh — went my way down to join my companion in tea and sandwiches before continuing on to reality, town, civilization.

Most of the honey had been spoken for and was duly picked up or delivered — the remainder stored on the back porch would soon go, as honey produced in the spray-free far northern regions is in vogue and some folks travel quite a distance to get it. Then, with all other items of business taken care of and nothing else to keep us around we wound up our visit. So then, early morning, of the third day we (Molly, her husband Bill) Abe and I, were out in the yard waiting for a young chap from just down the road (who had phoned earlier about some pictures of animals and scenery which he wanted to use as drawing material) and chatting. Now as a matter of interest at one point, as I recall, the conversation went something like this. Molly to Abe — 'It always seems as if you can't get back up to the 'Valley' fast enough — John here, is the same way, fairly champing-at-the-bit to get away from civilization. Just what is this irrisistable force?' Abe pondered a moment before replying, 'Well for one thing, it always seems so gloomy and smelly in town — then again perhaps its the clean air up there, coming straight off the snow fields — or crystal-clear water with that indescribable pure taste that makes one savour each sip — of course theres the birds — the animals — the soltitude — the freedom'. Just then a young fellow came zipping up the driveway on a bicycle (a friend of the Munroes) and was introduced to Abe and I — whereupon Abe produced a thick packet of photos saying, 'Hope you like them — anyway there you go and when you're finished, just leave them here with Mrs. Munroe — I'll pick 'em up in the fall sometime. You wanted some grizzlies, well there's a couple — not too clear — since I normally stay well away from those fellows — but if I'd had a camera with me a few weeks ago, and had the nerve — I could have taken a picture of a grizzly from me to you, there — I was that close'. In unison four voices appealed 'go on, lets hear it'. Abe — a far-away look in his eyes said 'Looking back, it seems unreal — like a dream — and at the time, my old noggin was too numb to take in anything but the essentials. I was on a trail, cutting through Parson's Mountain up near my place when I came face to face with the biggest grizzly I've ever seen — although that may be because I've never been that close to a bear before; later on when I checked, I found we were just about fifteen feet apart at the first meeting. I was approaching a corner, when without warning — there he was — like an apparition. The first thing I saw was this monsterous head with wicked red eyes — then in a moment his whole body came into view round the rocky buttress. He let loose a kind of growl and reared up on his hind

legs. Although it was a blistering hot day, the sight of that ten foot tall monster coming at me turned me cold as ice and I could feel the blood drain out of my face. Now — the ledge I was on was about three feet wide at that point with a precipice on my left 300 feet above the river. To my right, a perpendicular cliff disappeared out of sight hundreds of feet above me. Old 'Slewfoot's bulk blocked the road completely and I could see he wasn't about to back up, so I did the only thing possible — turned around, being careful not to make any sudden moves, and began walking back the way I had come. With the bear padding along behind I strived to keep the interval between us at least the same, and perhaps to increase the distance without alarming him. Keeping my head turned so that I could watch him out of the corner of my eye, we proceeded thusly for about a hundred yards when we emerged from the shady passage into an open area. On my left now was a gigantic sloping mass of scree and for the last few yards it had been in my seething mind that this was where I must make my move as (racking my brain) another opportunity would not present itself for some considerable distance. Quickly I stepped sideways and felt my feet sink into the unstable debris. Now as you know, scree has that frustrating ability of coursing back with every step so that it takes great effort to make any forward progress. Fear however, lent me wings — and with a superhuman lunge managed to stumble about three paces up onto the slippery mess before falling — contriving to twist at the same time as to face my adversary. I ended up in a sitting position — ankle deep and rear-end buried in the quick-sand-like rock flakes — just as 'old horrible' went by — his claws making clicking sounds on the hard granite surface. I held my breath — we were so close we could easily have reached our arms and touched one another. He never paused though — didn't even look my way — just kept up a steady gait; the only indication that he knew of my presence was a flaring, quivering snout — which, to my strained senses had all the appearance of a hair-trigger disposition. My heavens — he looked as big as a house — muscles rippling like quick-silver. The sweat was pouring off me by this time, and just knowing that grizzlies are not normally aggressive to man, wasn't much help just then in allaying my apprehension — as his sickening odor assailed my nostrils. Any creature that could fall a one ton moose with a single blow of its paw, killing it instantly — and then carry away the cracase without effort, would only require a half-hearted swipe to decapitate me; I could visualize my dead body being tossed around like a little rag doll. However, when I dared to open my scrunched-up eyelids more fully — he was twenty feet away and his broad rump was a welcome sight. While I watched in relief he dropped slowly out of sight over a crest in the trail. Whereupon I took a long, slow, quiet breath and waited — and waited. Perhaps ten or fifteen minutes went by — I don't know — I lost all track of time — mostly on account of I was straining my ears, listening for some sign of his progress. Eventually, I did hear stones chinking faintly at what seemed a fair distance so as quietly as possible I extricated myself from a mess of granite chips which — due to my movements — be them ever so slight — had by now brought a small avalanche trickling down so that I was now nearly waste deep (my behind, that is) and went my way — a great deal more humble — having brushed shoulders with such a noble and legendary beast. Stranger still — I wouldn't have missed it for the world. Stirring himself — he went on to say 'We've all been in some funny situations, and that's for a fact — but I think that experience tops my list, and somehow it only makes living in the back country more attractive. If its alright with you John — let's get back up there — I'm already homesick.□



ANSWERS TO TESTING YOUR BEEKEEPING KNOWLEDGE

(Continued from page 532)

1. **True** On August 31, 1922 Congress passed a law known as the "Honeybee Act", restricting importing living adult honey bees into the United States. At that time the law was principally passed to prevent the entry of *Acarapis woodi* into North America. This is the mite that causes Acarine or Isle of Wight disease which was just found in the United States in July for the first time. The act was further amended in 1947, 1962 and 1976. The most recent amendment prevents the introduction of genetically undesirable honey bee germplasm into the United States. This precaution was taken to prevent the entry of the Africanized honey bee. Honey bee semen may be imported into the United States only from countries determined by the Secretary of Agriculture to be free of undesirable species or subspecies of honey bees.

   Canada has a similar law, only they can import packages and queens from the United States.

2. **False** Only terramycin is approved by the FDA for use as a preventative treatment against American foulbrood. Sodium sulfathiazole was removed from the market in 1976, since it was not properly registered for this use.

3. **True** In most cases, beekeepers are unsuccessful in challenging the legality of zoning ordinances against beekeeping in courts of law once they are passed. Ordinances prohibiting placement of hives in certain areas of the city or town are considered lawful, as they are related to public health and safety.

   Legal, also, are requirements that hives must be located a certain number of feet away from property lines, houses and buildings.

4. **False** U.S. Grade A or U.S. Fancy honey cannot contain more than 18.6% moisture. U.S. Grade B or U.S. Choice honey also has the same moisture requirement.

5. **False** By law, honey containers from 1 to 4 pounds must show the weight in both pounds and ounces. Containers holding less than 1 pound may show weight only in ounces; those holding 4 pounds or more may show weight in pounds only.

6. **B**

.7 **IBRA** International Bee Research Association. Founded in 1949 with offices at Hill House, Gerrards Cross, Bucks, England. This research association collects and abstracts all available scientific literature on apiculture throughout the world.

8. **WAS** Western Apicultural Society. Was founded in 1977 to serve hobbyist and sideline beekeepers in the Western United States and Canada.

9. **ABBA** American Bee Breeders Association. This national association of queen and package bee producers was founded in 1948.

10. **AHP** American Honey Producers. This national association of honey producers was founded in 1969.

11. **ABF** American Beekeeping Federation. Beekeepers have had a national association almost continuously for more than 100 years. While the name has changed several times, it has been known as the American Beekeeping Federation since 1949.

12. **AIA** Apiary Inspectors of America. A national association of State and Provincial Apiarists founded in 1928.

13. **EAS** Eastern Apicultural Society. This association of hobbyist and sideline beekeepers of the Eastern United States and Canada was founded in 1955.

14. **SSBF** Southern States Beekeepers' Federation. This federation was organized in 1928 to promote Southern Beekeeping.

15. Madison, Wisconsin (North Central States Bee Research Unit)

    Logan, Utah (Bee Biology and Systematics Laboratory)

    Beltsville, Maryland (Bioenvironmental Bee Laboratory)

    Baton Rouge, Louisiana (Bee Breeding and Stock Center Laboratory)

    Tucson, Arizona (Carl Hayden Bee Research Center)

    Laramie, Wyoming (Honey Bee Pesticides/Diseases Research Laboratory)

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**

Beekeeping in the Dominican Republic

by CONNIE and ARNOLD KROCHMAL

On a recent work visit to the Dominican Republic, the Caribbean nation which shares the island of Hispaniola with Haiti, we made it a point to see as much of the beekeeping industry as we could.

The Republic is by far the most developed beekeeping country in the Caribbean, with the greatest production of any of the islands in the area.

In 1981 the United States imported from there 1,175,861 pounds of honey with a value of $939,000, and 422,426 pounds of natural beeswax with a value of $926,000. The Dominican Republic is our second source of beeswax after Canada, and our sixth largest source of imported honey from Mexico, Canada, Argentina, China and Australia.

The Salesian school has seventeen hives, from which they harvested about 200 pounds of honey last year. On a dry section of the island we visited another beekeeper who told us he harvested about 50 plus pounds per hive per year, in three or four harvests. We visited another beekeeper, a woman, who had 25 colonies, as well as a small bee-house for extracting and working. The small farmer with one or two hives may clean his honey through a simple screen filter.

There are two main bee races on the Dominican side of the island, black wild bees and Italian bees. The common black bees are not used, as they seem to be unable to defend themselves very well, are extremely nervous and tend to fly off when the beekeeper visits the hives, swarm easily and are hard to manage. These are thought to have been brought in by the original Spanish settlers 200 years ago or more, and are suspected to be descendants of Dutch bees.

The preferred bees are Italian in origin, with black bodies with three to five yellow stripes, and are docile, good workers and producers, resistant to disease, able to defend themselves, and remain calm when the hives are being worked on by the beekeeper.

There is some effort being made to hybridize these two races, at the Salesian school.

Bee products and bees are not allowed entrance into the country as a protective measure, and we are told that the diseases common in South and Central America apparently have not come into the Republic.

Two diseases which occur are dysentary, presumably resulting from high temperatures and high humidity, and a paralysis thought to be caused by a virus. Generally these are not epidemic and are of minor importance.

There is at least one bird which likes to eat bees, particularly queens during the nuptial flight, some lizards which like honey, the familiar wax-moth, and a brown butterfly which will lay its eggs in the hive.

A typical farm apiary, showing the pollen traps designed by Peter Bothfeld of Alimentos Naturales, the large pollen company.

One of the really heartening things we saw was the beekeeping training program at the Salesian Agricultural School, a vocational agricultural school run by the Salesian Fathers whose base is New Rochelle, New York. Here there is an apiary, extracting facilities, and a full-time beekeeping instructor, teaching the young students the basics of beekeeping. We were so impressed by this down-to-earth program that we have set up a modest annual award for the outstanding beekeeping student, enough to buy the student the items needed to go into beekeeping on a small scale.

A highlight was a visit to a very modern pollen factory, run by a German food technologist, who built his own pollen factory after a visit to Washington to get specifications to meet Food and Drug Administration requirements. With 8,000 hives out on farms, pollen is harvested every two days, yielding about 80 grams per hive per day during the season which runs about to May. In one year 103 tons of pollen were produced, with powder being marketed locally, and pollen grain abroad.

(Continued on next page)

Dominican pollen is darker than others, being somewhat brown in color. We understood our host to say that the Food and Drug Administration inspects a plant to be sure it is up to standards for a product to be imported into the United States.

We also visited a factory, small scale, head-nets and even packaged bees. The factory is small, but seems efficient and productive. While we were visiting it, a farmer came in to pick up several packages of bees, then hurried off to catch a bus back to his farm, bees and all.

The Dominicans are great honey eaters, and all over the country, in large supermarkets as well as small *colmados*, or neighborhood stores, a variety of honey is sold in small jars as well as larger containers. The export crops moves out in fifty gallon drums.□

GLEANINGS MAILBOX

Continued from page 546

Report From Port Townsend

Dear Editor:

After an early start and a few slowups the honey flow came on strong about the last of June and continued on through July. At this writing, the 8th of August, it appears to be about over except for places with irrigated gardens of borage, hyssop, etc., and second growth alfalfa. You'll also see bees buzzing around pearly everlasting flowers all fall, but, in these parts, they don't get much more than a little snacking from them. The flowers that provide the main honey flow: white clover, blackberry, thistle, waxberry (snowberry) fireweed, vetch, wild peas and cat's ear— have dried up. It was a better than average flow.

Swarms began coming out about the last of April, earlier than usual, coinciding with honey flow from fruit bloom, dandelion, madrona and those little pink blossoms (you name 'em) on ornamental bushes around houses. During the rainy times in June—not many. So, in July, with swarms appearing on bushes, branches and buildings— and swirling over treetops—. Besides those from my own hives (sometimes you catch 'em, sometimes you don't) I often get called out on swarm catching details. The first call came on the first of May, and the last on the last day of July.

P.S. August 17. Yesterday a few drones, back on the doorstep of their heretofore happy home after their daily frolic in the sunshine, got the hassle treatment from their unfeeling sisters. It's about over for you, friends.

Everett Whealdon
314 Logan Street
Port Townsend, WA 98368

One Year With The Honey Bee

by JAMES M. MARSH 309 Lime Drive Nokomis, FL 33555

I have been keeping bees since the Spring of 1932, when I lived near College Park, Maryland. I have been a commercial beekeeper and a dealer in beekeeping supplies, prior to moving to Florida in June 1974, at which time I sold out. Since coming to Florida I have a few colonies just for the pleasure of working with them.

Now, I am writing this to the beginner, the novice, and the hobbyist. When does your beekeeping year begin? Start thinking about it. What to do and when to do it. Few new beekeepers think of it in this way.

The year really starts in the Fall, after you have harvested your last crop of honey and finished your extracting. That is when your beekeeping year really starts. First you fumigate your supers to keep out the wax moth. Then you go through your bees and check them for food stores, and see that they have at least 60 pounds of honey and plenty of pollen. Check for weak colonies; and if you do have any weak colonies, you should unite each one with another colony. One strong colony is better than two weak colonies.

Check your bee yard locations, and if possible, set the hives so the prevailing winter winds do not blow into the entrances of the hives. Restrict the entrances to keep mice out of the hives. If you have trouble with skunks, just take some heavy wire cloth and cut a strip about an inch and a half wide, the length of the hive opening. Then bend it lengthwise about 90 degrees and tack in onto the bottom board. That will take care of the situation.

The next thing is to check and repair any bottom boards and hive tops, hive bodies and supers that need it. Then go throgh all extra combs — brood combs and super combs. Replace any bad combs with new foundation, so when you need them they will be ready. And be sure to paint all equipment that needs painting.

Now your work really begins. The first favorable day in the spring, check bees for food and brood. Now is the time that they need plenty of food. As the queen starts egg laying, the colony uses a lot of food; and if they don't have plenty, you should feed them. Any weak colonies should be united; and if they are queenless, there are two things you can do. One is to give them a frame of eggs from another hive and let them raise a queen. The best thing, though, is to buy a new queen to give them. The advantage of giving them a laying queen is that she will start laying three or four days after you put her in the hive. Giving them a frame of eggs, it will be three or four weeks before a queen they raise will start to lay, so, you are about a month with no brood rearing when you need brood.

Your honey flow will soon be starting, so it is time to put on supers. It is a good idea to put on TWO supers; and when the bees start working in the top super, you should put on another super. The main thing is to not let the bees become overcrowded. If they do, one of two things will happen. One is that they will swarm, and there goes your honey crop. Or, they will build a lot of burr comb. That will also cut down your honey crop.

If you are producing comb honey, or cut-comb or chunk honey, you should take supers off as soon as they are completely filled so the combs do not become travel stained, which cuts down the quality and therefore the price.

If you are producing extracted honey there is no need to be in a hurry to take the supers off, as travel stain does not matter.

When you extract your honey and get it in your tank, let it sit overnight, so all air bubbles will come to the top. Then when you bottle it, you will not have any foam in your jars.

Well, that just about winds up your year. If you have much honey to sell, let your friends and neighbors know, and it will move.

If you have any problems, or questions you would like to ask, I will be more than glad to try to answer them.□

Let's Save The Bees

by STEVE FORREST, Rt. 1, Box 135, Bethany Rd., Moranian Falls, N.C. 28654

Public opinion in the United States is constantly changing due to our close relationship with the media. Someone or something can go from the top of the heap to the bottom overnight because of media coverage. We have organized a mass media blitz for October and November to present our case to the American people and we need your help and the help of the other 20,000 people reading this.

We all know that we are beseiged by more problems than we can puff a smoker at. If we are to overcome these problems we must inform the American people and ask for their help. The majority of our problems come because people don't know how important bees are for pollination and for the existence of the nation's wildlife. With you help we can correct this. We would have no problem getting more funds for the research we need if people understood our plight. Americans would stop eating foreign honey if they know the terrible impact that this unfairly priced imported honey was having on our industry, resulting ultimately in the loss of as many as one million colonies of bees. Home gardeners would be more aware of the care they should take in applying insecticides if they knew the value of bees to their gardens. Perhaps we could even impress enough people that one day certification might be required to use any chemical that kills bees. Promotion is what we need, we need it now and you are the only one who can do it!

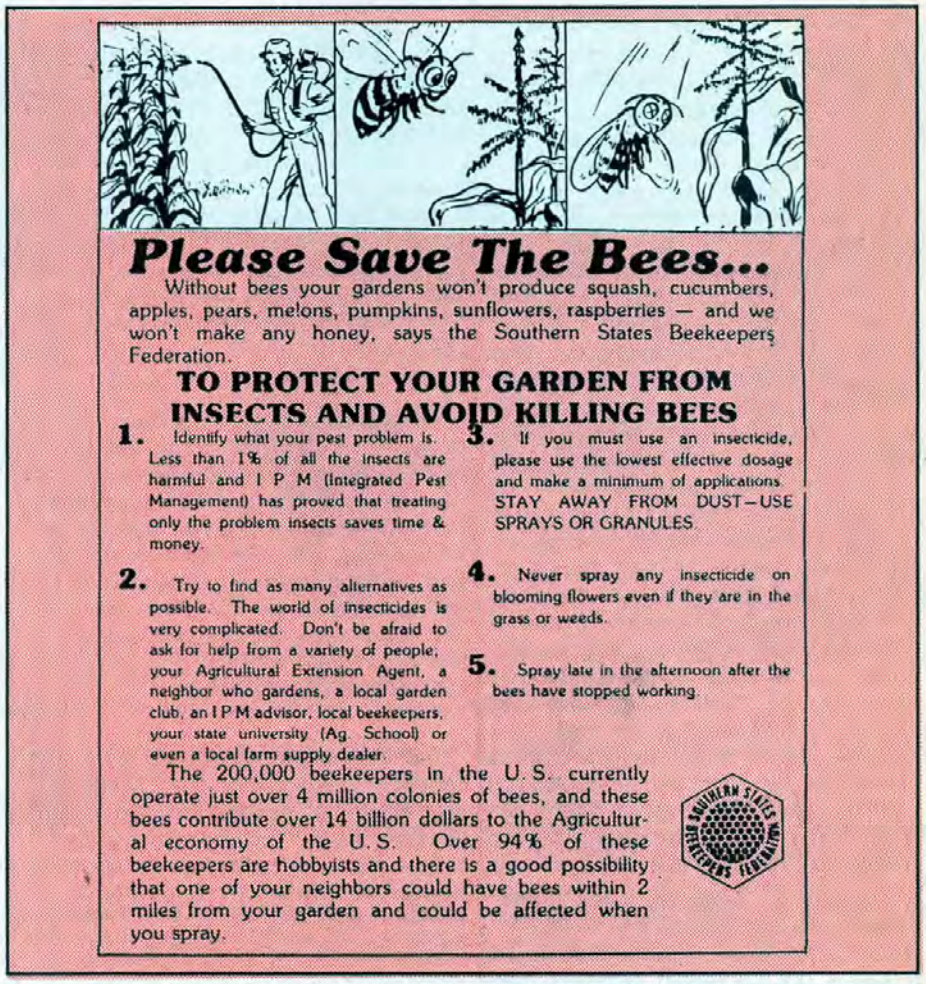
More than two years ago the Southern States Beekeepers Federation started the media campaign "Save The Bees". Information packets were sent to all the members of 22 state associations with an explanation of what to say and to whom. Packets were also sent to every radio station, television station, and newspaper in that 22 state area, with a news release, and other information geared to each individual branch of the media. A 30 second television-commercial public service announcement (PSA) was produced and distributed to the television stations in 10 states. The commercial depicted a picnic scene with food disappearing as pollination requirements were explained. The results were tremendous and the publicity for our industry was staggering. This year with the help of the Eastern Apiculture Society we have sent tapes to the remaining 40 states and the Canadian Provinces.

This article is the kick-off for our 1984 promotion. We are asking for everyone who reads this article to make personal contact with every radio station and newspaper that you can during the months of October and November to ask for their help in publicizing our problems.

All forms of media are supported by the communities that read, watch, or listen to them. The tighter the bond between the media and the public, the stronger their station or newspaper will be. Almost all stations and newspapers pride themselves on being alert to the needs of their communities. They even fill their outer offices with awards and citations for public service. You should expect to be welcomed with open arms. They want to help you and all you have to do is ask!

The strength of this promotion lies in **you!** Beekeepers almost always are respected members of their communities and you will be able to get more and better coverage than any professional advertising agency.

The first thing for you to do is to organize your efforts and get as many other people to help as possible. Assign newspapers and radio stations to individuals or groups. If there is no one to help then do them yourself. Working together all over the nation we can



deluge the media and make things better for our industry. So let's all get together and save the bees!

When you approach a radio station, you should call and try to make an appointment with either the General Manager in small stations or the Operations Director in larger stations. Tell them that you have a problem, you need their help, and would like to come

(Continued on next page)

in and talk about it. Be on time and take a jar of honey with you, or two, or three. Better yet, take some of your beekeeper friends and everyone take a jar of honey. Give them a packet with copies of information about the importance of bees. Consider copying more stories from past issues of this magazine to better explain our problems or look to other sources for information such as your state, regional, or national beekeeping associations, your state entomologist or apiary inspector, or your state agricultural college. Explain our problems with insecticides and impress on them the fact that they would not be a problem if people knew the right way to use them. Also, make them aware of the problem of imported honey and how we cannot compete with countries that have an over abundance of cheap labor. Explain how reducing the bee population in the United States will affect our food supply and wildlife. Ask for their advice in helping you to get the word out. Are there any interviews they could use? How about a panel discussion with a group of your beekeepers? Would the station consider making an editorial comment on the value of bees? Can you furnish honey for an on-the-air giveaway? Does your local agricultural extension agent have an existing program and could he talk about insecticides? Can the news department use our news release? These people's business is promotion. Ask them not only for coverage but for ideas. Impress on them the idea that we need extended coverage and any way you can help you will. Keep in touch during the promotion with kindly feedback after a particularly good spot and when it is over go by and thank them again. More honey here would probably be the best thank you possible. I believe we will get the most coverage from the radio stations and we should devote a good amount of time here.

You should approach a newspaper in essentially the same way you did the radio station. Call the editor and tell him that you have a problem and you need their help. Try to get an appointment to come in and talk about it. Give them an information packet along with a jar of honey and explain our problems. Try to get them to run the news release and also to publish our ad layout with the five recommendations to home gardeners. Might they consider an editorial? How about a story with a local beekeeper who has had a bee kill from insecticides or with someone who is having trouble in the market place competing with imported honey? Is there anyone who already writes a column that might consider helping us, possibly the Farm Bureau or Agriculture Extension Service or even garden clubs? Don't forget letters to the editor. Ask for all and any help! Stay in touch and remember to say thanks when it is all over. Let's leave a sweet taste in their mouths for bees and beekeepers.

The form of media with the greatest impact in society is television. There should be a beekeeping club in any city with a TV station since there are only 650 stations in the U.S. Work through your club because it takes knowledge of the programming to be able to approach a TV station. All stations produce some of their own shows and each has it's own producer with whom you should speak. Some of the names of the shows might be "Good Morning Piedmont", The Scene at Noon", Top of the Day," Cooking with Betty", PM Magazine," or even "Square One". If you are unsure as to the name of the producer, call the station switchboard and ask. Remember — call, make an appointment, be on time, be prepared, take help and take honey. Check to see if the news department can use your news release. Tailor your presentation to the individual program you are approaching. After your spots have run, take in more honey and say 'thanks' again.

If we all work together we can help our industry! It is very easy to get free coverage for our problems if you will only try. The biggest problem today in beekeeping isn't anything but apathy. It is apathy that got us where we are now and the only way to turn that around and make the needed changes is to get up off our apathy and go to work!

If you think we are going to need more research funds in the future then you had better get to work! If you realize how a strong commercial industry benefits you as a beekeeper and you would like to see imported honey cut to a minimum then you had better get to work! If you would finally like to see something done about bees getting killed by insecticides then you had better get to work!

The media affords us tremendous access to the American people. Working together with factual information we can present to the American people our story, a story that can and must be told NOW!

State association leaders or anyone else interested in promoting our industry are invited to attend the 56th annual Southern States Beekeepers' Federation Convention in Williamsburg, Virginia, November 11-14. Additional information may be obtained from Dr. John Ambrose, 1403 Varsity Dr., Raleight, N.C. 27606.

A Gleanings Interview

Karl Showler began keeping bees in 1949 and despite twenty years of work in the fruit industry, researching developments on tree root stocks at the East Morning Research Station in the United Kingdom, his interest in bees persevered. During his research activity, Showler began to give lectures and seminars to beekeepers. He traveled extensively through the United Kingdom, talking to beekeepers, arranging fairs and, in his own words, "generally being in the beekeeping scene."

In 1966, Showler became affiliated with the the International Bee Research Association (Gerrards Cross, U.K.), which serves as a clearinghouse for apicultural information and is a resource for beekeeping development with emphasis on Third World countries. He became a paid employee in 1970 and has worked at Hill House headquarters since that time. In the following interview, Showler draws on some of the international issues and developments that are pertinent to contemporary beekeeping in the United States.

GLEANINGS: If you were to tell someone what things should absolutely be kept in the mind while walking to the bee yard, what might some of those things be?

KARL SHOWLER: I think you have to be happy with your bees. You also have to be organized and able to interpret the data presented to you by the bees. I think the only effective way for people to do that is by reading widely. The beekeeper who has read widely may never before have seen the things he observes in his colony one particular afternoon, but he can interpret what happens, without depending solely on his own experience. If he has read, he can be alert to the problems that arrive.

A calm nature, quick thinking and a knack for planning ahead are characteristics of a good beekeeper. The nature of bees being what they are, they will spring some surprises on you and you will get yourself into scrapes. You cannot eliminate that fun part of the beekeeping hobby, but you can at least try to eliminate the difficulties by being thoroughly prepared and having a good supply of equipment.

GLEANINGS: What are some of the common management mistakes?

KARL SHOLWER: I think the major management mistake is not having enough of the right equipment at the right time. It is also important to utilize that equipment effectively. For example, the beekeeper who keeps hives but does not have nuc boxes in order to temporarily house swarms is always going to be in trouble. It is better for the beekeeper to have four hives and two spares rather than six hives and no spares. On a limited budget, that is what he may have to do.

Hobbyists may also have to accept that they can keep bees in cardboard boxes if they do not have money for the more successful beekeeping techniques. A piece of cardboard nailed to the top of the wooden box may have to suffice for a super.

However, I would stress adequate and competent equipment. I would recommend a decent veil and bee suit. The beekeeper who goes to the bees with a piece of muslin thrown over his head, with bees swelling up his arms and ears, isn't

Karl Showler

going to make a good beekeeper. Some people teach beekeepers that they do not need very much in the way of protective clothing, but I disagree; the bees can sense can sense a person's nervousness. With with bee protective clothing the bees are less likely to attack or do harm.

GLEANINGS: What are some common marketing mistakes?

KARL SHOWLER: Marketing is difficult in the United States because there are so many beekeepers who have large crops of honey to handle. By contrast, in Great Britain, and I think in all of Europe, most beekeepers have relatively small amounts of honey and they are marketing it directly to the consumer in a highly industrialized country, where factories and beekeepers are in close proximity. Most beekeepers sell their honey off the tailgate of their cars.

In rural areas in Great Britain and Scotland, the rule is generally that low population locally makes it difficult to sell the honey, so many beekeepers have to search out a market. The French often operate cooperatives and the Scots are trying various ways of marketing, from informal methods looking toward the local tourist industry. Most British beekeepers work in a factory and sell honey to their workers.

GLEANINGS: Your job puts you in contact with developments internationally. Some American beekeepers will either be unwilling to recognize or see no point in recognizing the fact that there may be developments in other parts of the world that are pertinent to them. Could you draw on some international issues or developments that perhaps we should be more aware of and concerned with? These parallels could be in terms of research, the economy or marketing, for example.

KARL SHOWLER: I think that is a general moral issue in that the countries outside western Europe, the United States and Canada suffer in general from food shortages. It does not matter whether their own internal politics or their country's climate makes their population indigent: people are

(Continued on next page)

hungry and it is a moral obligation on those of us who have a surplus to encourage the development of food which can be consumed locally, without requiring a great deal of machinery, fertilizers and sophisticated technology. We need a keen awareness that bees can give us honey and high-protein foods to eat. Many African beekeepers eat brood. I've eaten them and it's quite a bit like eating seafood.

Beeswax is an important export item. Industrialized nations consume much more beeswax than they produce or that beekeepers care to market. A vast amount of beeswax gets thrown away in the United States and Great Britain.

Commercially, the United States is in danger of overproduction. Because the United States has subtropical area and covers what I would call a Mediterranean climate, many products can be found in the United States that don't grow in Western Europe. West Europeans are less influenced than Americans by the fear that as new countries step up or begin to enter the bee industry, there will be a decline in the international markets to which beekeepers can market and profit from their honey surplus.

Japan is example of this reverse process. Japan is an important influence on the world honey market. The Japanese, as consumers, draw in honey from large market areas and increase the world price of honey. The years the Japanese don't buy honey, the price declines.

GLEANINGS: In regards to the future, are there certain potential dangers that you see ahead, such as the Africanized bee or mites?

KARL SHOWLER: That is a difficult question to answer. *Asiatic* species are potential hazards. Varroa mite came from Asiatic species after it had been closely associated with or mixed with the population of the *mellifera*. If *mellifera* had never been taken to Southeast Asia and cultured side by side with the Asiatic species, there wouldn't have been a transfer of the mite. There are other mites that present hazards to *mellifera* if they come in contact with it. It is possible that there are viruses and other diseases that might spread through the *mellifera* and it's difficult to foresee what those will be.

It has been claimed the Japanese had Varroa in the *mellifera* in the 1950s. Because they were used to bees infected with the mite, they didn't think it was strange. Keeping *mellifera* in the Far East has its problems, so I would like to know how the Japanese and Chinese do beekeeping.

With regards to the Africanized honey bee, I would stick my neck and say that I cannot see how one can quarantine countries forever against equivalent creatures from the other country. In Great Britain, we are fortunate in that we are so far north. We have had an open-door policy as far as bees because tropical and temperate bees have a hard time surviving in our climate. I think slowly, over the years, we will see the Africanized bees establishing limits within South America and the United States. What will happen if the Africanized bee gets Varroa, whether this will serve as a counter check, I don't know. I would have thought that Varroa would have spread through Western Europe and the United States in my lifetime. You have this wonderful track record of keeping out the Acarine mite. You have managed to keep it out for 300 years when no one recognized it and now for 80 years when people have.

GLEANINGS: Where do you perceive the strengths of future beekeeping to lie?

KARL SHOWLER: Today, many young people who will influence the future of beekeeping are getting experience in the Third World. These people are often abel to leave their own country because their bee industry is too small to contain them. Mark Coleman, from Chicago, was in Honduras working for the Pease Corps. I think he was the oustanding Peace Corps. worker for 1982 and he will play some part in the future of American beekeeping. There are many others going overseas and coming back with external experience. This is important in Great Britain, as we have no commercial industry and people get their experiences in other countries There are a growing number of people who are involved in beekeeping worldwide.

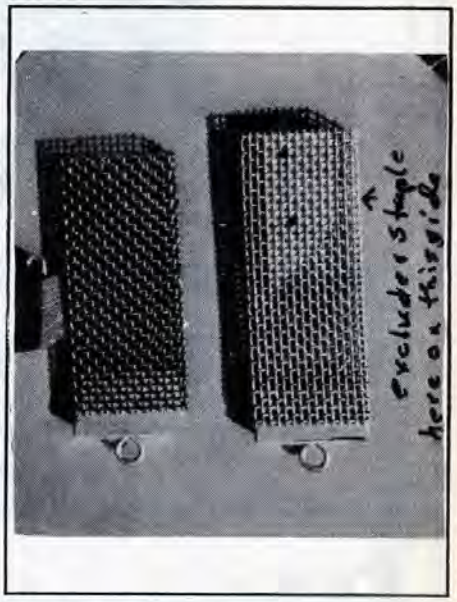
I think that beekeeping is going through an exciting stage. I started beekeeping in 1949, following the post war boom. In 1955 beekeeping pretty much collapsed in Western Europe and the United States. Togday, there is a great return to the land, to hobby activities, which has caused beekeeping to resurge. At this moment, there are about 18,000 beekeeping people in the British National Association and 220 local associations running various educational programs. I would think this is evident in the United States, too. I don't see know enough about United States beekeeping to say this is acutally happening, but there appears to be more involvement in activity. When you see it in other fields, I don't see why beekeeping should be excluded. Therefore in the next 20 years, I would say that beekeeping will continue to expand. Perhaps this is not true at the commercial level but more the chap who takes up the hobby to supplement his income.

In addition to making honey, there are other sidelines to beekeeping, including education and pollination. In Great Britain, there is a great interest in bumblebees, which enriches beekeeping.

I am very optimistic about the future of beekeeping. I know we have the threat of Varroa and this will change how beekeeping is done, but I think beekeeping is resilient enough to resist the difficulties Varroa or the Africanized bee will present. □

INTRODUCTION CAGES

Continued from page 542



English design Worth Chantry principle cage excluder stapled and block removed show detail.

Me? What is my favorite cage? Well, I thought you would never ask. It is the Thurber long cage, the construction and use of which was detailed in the April 1984 *Gleanings*. Maybe you will not like it as well as one of the other home buildables in this article, but until you make up the cages and give each a try, who knows what you will come up with. You might even invent a cage on a new principle and revolutionize beekeeping.

AS A LAST GASP LET ME MENTION THAT JUST IN THE WEEK OF APRIL 23 to 28, 1984 HERE WE HAD SEVERAL QUEENS DIE IN THEIR CAGES BECAUSE SOME PEOPLE DO NOT REALIZE YOU PUT INTRODUCTION CAGES WHERE THE BROOD IS AND NOT OUT IN LEFT FIELD SOMEWHERE. UNATTENDED QUEENS CAN AND DO DIE OF EXPOSURE ON COLD NIGHTS!

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		NOSEM-X™ 2.0 gm.	12	19.50	222.30	
		NOSEM-X™ 9.5 gm.	12	58.00	660.00	
		Terramycin® Soluble Powder 6.4 oz. (10 grams Terramycin® per packet)	62	2.50	139.50	
		Terramycin® Soluble Concentrate 4.0 oz. (25 grams Terramycin® per packet)	60	4.00	225.00	
		TERRA-BROOD MIX™ 16 oz. (1.0 lb.)	6	3.15	17.95	
		TERRA-BROOD MIX™ 56 oz. (3.5 lb.)	4	7.65	29.10	
		Certan™ 4 fl. oz.	6	4.75	27.10	
		Certan™ 1 gal.	2	69.50	132.05	
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		Pump-Up Pressure Hand Sprayer (For Certan™)		7.95		
		Moth Fumigator (Para-Dichlorobenzene) 1 lb.		3.00		
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We get photos from all over the country featuring excellent county fair and festival honey exhibits. We are, though, understandably proud of the booth sponsored by the Medina, Ohio Beekeepers Association: pictured here with one of our favorite beekeepers, Walter Thomas.

Nature and the Honeybee

by PETER VAN BORST 635 Fresca St. Solana Beach, CA 92075

I seek acquaintance with Nature, — to know her moods and manners. Primitive Nature is the most interesting to me. I take infinite pains to know all the phenomena of spring, for instance. . . . .

Henry David Thoreau, Journal

The honeybee responds rapidly to environmental stimulus. Here in southern California at the beginning of December and many plants are blooming. After the long dry summer and fall, the honeybees are eagerly gathering fresh nectar and pollen. Their combs are withering from fresh wax and filling with new honey. What does it matter that their counterparts in other parts of the state are huddled in tight masses against the cold? Here, they have received the signal that "spring" has arrived and they behave accordingly. In reality, the coastal area of southern California has only two distinct seasons— the cool, wet one and the hot, dry one. The bees have all winter, such as it is, to build up their populations and then, if conditions are favorable, they can make a large crop of honey. Sometimes, though, the summer comes too suddenly and scorches the plants— and other years, the damp weather lingers into June.

In observing the fluctuations of the honeybee life cycle, one becomes intimately acquainted with the interrelatedness of all nature. The plants blooming in December follow instinctive urges based on eons of repetition of certain climatic patterns. The honeybees take advantage of the abundance of flowers without concern whether it may be the last honey before three months of rainy days or the first honey of a mild, sub-tropical winter. It is said that the human animal has replaced instinct with reason, that we do very little instinctively. The honeybee, too, it seems is very high on the evolutionary ladder in this respect, as they are capable of responding to varying stimuli rather than merely repeating instinctive patterns.

Some varieties of honeybees are more adaptable than others. The bees for Tunisia reportedly form very small colonies in times of drought and can expand extremely rapidly to take advantage of short desert honeyflows. The honeybee exists almost everywhere people are, and even preceded them as the Europeans populated the Americas. The bee seems able to adapt as readily as humans to a variety of enviroments due to its exceptionally well developed system of survival. The honeybee also affects its environment in subtle ways. For example, wild bees and wasps may not be able to withstand the competition of honeybees and gradually die out in areas where honeybees are introduced. Also, as a result of increased and more efficient pollination, certain flowers will begin to predominate in areas where bees are kept in large concentrations.

To the beekeeper, the study of nature and the links between weather, seasons, plants and bees affords continuous and endless fascination. It is not simply a matter of observing and making note, only to use these notes as a kind of schedule— but rather, observing and comparing, always being alert to new combinations of circumstances.

We soon get through with Nature. She excites an expectation which she cannot satisfy. The merest child which has rambled into a copsewood dreams of a wildness so wild and strange and inexaustible as Nature can never show him.

Thoreau, Journal

When one first takes up the study of honeybees, it is like entering into a whole new world. There's so much to learn— terminology, techniques, theories. But more than anything, what is exciting is the promise of intimate contact with living nature, of going into the dark recesses of a honeybee colony and exposing it to daylight and the human eye. For within the hidden passages of the bees nest may lurk natural laws that the human heart has long since ceased to obey. Many people have realized the poverty of man in this respect and have gone to nature begging, demanding to know her plan for her realm and especially how it concerns humankind. While his fellows huddled around the homefires, John Muir climbed tall trees during blizzards to expose himself to nature's meaning. Similarly, a beekeeper will endure many stings to unearth some aspect of Nature's spectacle. But alas, the mystery of life remains a mystery. We must come to realize that the human organs of perception are limited. They may be more sophisitcated than those of other living creatures but ulitmately they were designed for survival and not for the perception of so large a phenomena as nature, in its infinite variety which is spread out, not only over so vast an area but so long a period of time. And even if we could comprehend all of Nature's variety and purpose here on earth- we're still a mere speck of sand in the Universe. Underlying it all is a mystery which will always be concealed from us.

* * *

We need to witness our limits transgressed and some life pasturing freely where we never wander. . . .

Thoreau, Walden

Return to the honeybees, up at dawn to fly off to fields, whose location has been carefully memorized by tiny brains as small as individual cells of other organisms. As well as we may feel we know an area through our walking or driving down its paths and streets, how much more intimately do the honeybees know it! And with what singlemindedness of purpose do they tackle their job. There's never any element of doubt that the chore is worthwhile and never a need to stop to reconsider the plan. The beauty in observing all of this is not so that we might gain some valuable insight into how we should live our lives but rather in seeing how different we, as humans are from honeybees. And being so different, we can still work together. We take advantage of the bees' ability to fly out and harvest nectar and pollen which would otherwise never be available to us. They take advantage of the hives we construct in such a way to provide for their every requisite, and our ability to place them where they will have the best chance to prosper.

But more than this, it is the opportunity to get a sense of the infinite that makes beekeeping so ideally suited to one who appreciates nature. Watching honeybees work, we see the timeless process that nature's forms reveal to us. Intellectually, we may think that bees have evolved from some other froms of insect life and may even be still evolving, as we watch. But the fact remains that the honeybee colony appears before us intact, with no apparent past or future; it is timeless and wonderfully complex. It is easy, then, to believe that it could have been placed on earth already completed. All of natures appears before us in miraculous perfection when we just look at it without interpretation or explanation.

Then we can go back to work with the bees, better appreciating the importance of the knowledge required to understand them in order to work with them.□

DESTROYED

by ALAN HARMAN

The bees have returned to 79-year-old Justyn Kuzma's property on the edge of St. Thomas, a city of 28,000 in Ontario, Canada.

There are not many of them — eight hives totalling only about 80,000 bees.

But earlier, in a time of agony and despair, the old man had decided to end his life-long love affair with the honey gatherers.

Earlier, on a dark, rainy night, vandals had slunk onto Kuzma's property on the edge of the city and used malathion to wipe out his 35 hives and 1.7 million bees.

Henry Hiemstra, an apiarist with the provincial Department of Agriculture, had never seen anything like it.

"It was not done by young people," he said, "it was too professionally done."

In his 24-year career he had never seen "an annihalation as complete as this," he said.

The poison — the same as that recently used to battle a medfly outbreak in Florida — impregnated the wood in all 35 hives.

"They all had to be destroyed," Hiemstra said.

Kuzma, a son of the Ukraine who came to Canada in 1950, speaks little English. His wife, Mychalina, recounts the agony of the loss.

"I was in town," she remembers. "I came back and he was waiting for me. He said 'Come quick, we have a terrible tragedy in the house.' I thought somebody had been killed in a car accident or something. The he told me somebody had poisoned our bees.

"I can't tell you how upset he was. It was the same with me. I wanted to cry when I saw all the bees dead. I have high blood pressure and when he told me the bees were killed I thought I would end up in the hospital."

Like the police, the Kuzmas have no idea who could have planned and carried out the attack.

"Our neighbors are very friendly, very nice," Mrs. Kuzma said.

Once, about 15 years ago, there was a complaint about the bees. An inspector visited the Kuzmas and found the apiary was located according to law. Since then there had been no complaints.

Kuzma's 35 hives averaged more than 45 pounds of honey a year each. He sold a little, but most was given to relatives, friends and neighbors.

"It is a hobby," Mrs. Kuzma said.

After the enormity of the destruction sank in on the stunned couple, Kuzma was prepared to give up.

"The first thing he said was 'I will not keep bees anymore,' Mrs. Kuzma said. "But a few hours later he said he might start again.

"I was not sure. But he doesn't like to sit around. The bees keep him busy and he is happy with them. When he is happy, I am happy."

But starting again was not a simple matter.

Justyn Kuzma

"Whoever did it planned well," Mrs. Kuzma said. "It was too late to order more bees from the United States. I called, but they said it was too late and the bees would die."

St. Thomas is becoming an industrialized city, but its people still retain the close-knit friendliness of rural Ontario.

When news of the destruction broke the people were very outraged.

Outraged not only because of the wanton destruction, but also because Kuzma's bees made up about 80% of the area's bee population and thus contributed heavily to the pollination of gardens and orchards in the area.

"Everybody in town was upset," Mrs. Kuzma said. "Now people in town call us when they see bees."

When the call comes, Kuzma grabs a cardboard box and a burlap sack and heads for the swarm. Once he has the swarm in the box he heads home to his hives.

(Continued on next page)

Slowly the numbers have grown to eight swarms and about 80,000 bees.

There is no honey for the Kuzma's this year.

"We have no honey this year because he has to feed them. He has to use the honey from last year to feed them; to get them settled in," Mrs. Kuzma said.

Kuzma was a young boy when he first started beekeeping in the Ukraine.

After the Second World War, Kuzma became a student at a German agricultural University. He met his wife while in Germany and they were married in 1947.

In 1950 the couple moved to Canada and settled in St. Thomas.

Because of his lack of English, Kuzma took a job as a janitor at the hospital there.

His return to beekeeping came through the job.

"One day everybody panicked because there was a swarm of bees at the hospital," Mrs. Kuzma said. "They called him. He collected the bees and that's how our apiary began."

Kuzma collected more swarms and bought more bees from the United States.

After his retirement in 1965, Kuzma's bees became his major occupation.

Mrs. Kuzma said she hadn't minded her husband starting the apiary.

"My father had also kept bees," she said. "I was interested. I liked bees."

She used to go out at night — when the bees were not flying — to check the hives.

"Now I'm afraid to go out at night," she said.

Hiemstra theorizes somebody in the neighborhood got fed up with the bees.

"Whoever did it knew what they were doing. It was expert. I wouldn't be able to do it."

Hiemstra said Kuzma has been helped in rebuilding his apiary by the weather, which has caused an unusual amount of swarming this summer.

In the meantime, as Kuzma awaits reports of more swarms, the police continue their investigation, although they say they have no suspects.□

Grass-leaved Goldenrod Colonies

by FRANCIS O. HOLMES Henniker, NH 03242

When the grass-leaved goldenrod (*Solidago graminifolia (L.) Salis.*) is planted along roadsides to furnish nectar and pollen for honeybees, the clones of plants chosen for this purpose differ in many ways. Early-blossoming lines, collected near the northern limit of growth furnish food to the honeybees during the period of nectar dearth in early August here in southern New Hampshire, as has been recorded previously *(Gleanings In Bee Culture* 103(8):260. 1975). Their seeds mature just about the time when local strains of the same species begin to bloom.

Both the early-blossoming and the later blossoming lines differ among themselves also in colony size. Transplanting is best accomplished in late autumn, when each flowering stem that is pulled up or dug up shows from one to six well developed stolons, stored with food and ready to grow out, and up, to make new erect flowering stems after the winter passes and growth begins for the new year.

The stolons are short in some seedling plants and long in others. The short stolons make small, dense clumps of flowering stems, sometimes spaced only an inch apart. Longer stolons grow out to produce larger and less crowded clumps that are conveniently economical for labor in planting. Whether honeybees prefer the densely flowering clumps or the diffuse ones is not clear, but the dense and diffuse types of growth are useful to populate spots of different dimensions along roadsides.

In wild populations, where each clump of plants represents a separate seedling, each clump is likely to differ in one way or another from other clumps. Beekeepers may not be able to note the slight and perhaps hidden differences; but their honeybees will detect for them any physiological differences in rate of flow of nectar or in quality of nectar. And the clumps that are favored by the bees will be the best sources of cuttings for planting.

Many of our important crop plants have been developed and progressively improved, by conscious selection among wild populations of the species. Our present large-fruited blueberry varieties were based on a campaign to enlist the cooperation of multitudes of blueberry pickers. Even in the wild populations of blueberries occasional seedling plants had unusually large berries. Crosses between such exceptional wild plants gave even more extraordinary progeny plants, and selection among the hybrid progeny finally gave us our present-day high-yielding, large-fruited named varieties.

Beekeepers observing honeybees collecting nectar from grass-leaved goldenrod plants have two simple ways of appraising the value of individual plant colonies.

A fair appraisal can be made of the value of a particular colony by counting the number of honeybees working on it compared with the number working on a neighboring colony, or on an equal area of a neighboring colony.

Goldenrod

An even better measure of excellence requires only a simple count of seconds to measure the time between flights from one flowering head to another. If a honeybee flies to a new location in five seconds or less, the nectar supply is probably rather poor. If she flies after ten seconds, the nectar flow is better, but perhaps not extraordinary. If fifteen seconds or more elapse between flights, a worthwhile source is under observation and the saving of rooted stems for planting close to other good selections is probably justifiable. Such excellent seedlings, planted close together for chance cross pollination by visiting honeybees, in future years will become a source of seeds of above-average value for roadside planting. Someday we may have truly "cultivated" and, perhaps, named varieties, worth planting by beekeepers in general for "nectar farms".□

NEWS and EVENTS

Southern States Beekeepers Federation Annual Meeting

The 56th Annual Convention of the Southern States Beekeepers Federation will take place November 11-14, 1984, In Williamsburg, Virginia. This is one meeting you will not want to miss. Every aspect of the program from the morning sessions to the afternoon tours will be of interest. The program is also designed to provide free time to explore one of Virginia's most historic areas; there will be time to wander the streets of Colonial Williamsburg and to dine in colonial taverns. Furthermore, the hotel where we will meet — The Patrick Henry Inn, is located only one block from the restored area of Williamsburg.

King's Arm Tavern, Colonial Williamsburg.

The SSBF will also offer an Advanced Bee School for beekeepers who have several years of experience. This short course will involve nine hours of instruction and will be taught by some of the countries leading honey bee experts and educators.

For more information on the SSBF Convention and registration materials, write to: Southern States Beekeepers Federation, 1403 Varsity Drive, Raleigh, N.C. 27606. Registration material will be available by August 20, 1984 and must be returned by October 15, 1984 for guaranteed tour and lodging reservations.

Program Highlights for the 56th Annual Convention Of The Southern States Beekeepers Federation

Sunday — November 11, 1984

2:00-8:00 p.m.	Registration
7:30-10:00 p.m.	Board of Directors Meeting
7:00-11:00 p.m.	Setup of Commercial & State Assoc. Displays
2:00-5:00 p.m.	Advanced Bee School — Day 1 Instructors — Dr. J.T. Ambrose, Dr. R.D. Fell, Dr. H. Shimanuki

Monday — November 12, 1984

Morning Program

8:00 a.m.-12:00	Registration
8:30 a.m.	Call to Order — Steve Forrest, President SSBF
8:40 a.m.	Invocation — Rev. A.A. Blanks
8:45 a.m.	Opening Remark — Dr. John Ambrose, Moderator
9:00 a.m.	"Bees and the Law" Speaker — Murray Loving, DVM, J.D.
9:45 a.m.	"Murphy's Laws and Beekeeping" Speaker — Dr. James Tew, OSU
10:30-11:00 a.m.	Coffee Break
11:00	"Federal Regulations, Price Support and Honey Imports" Speaker — Mr. Harry Sullivan, ASCS
11:30-12:00	"Taxes and the Beekeeper"

Afternoon Program

1:00-5:30 p.m.	Old Plantation Tour Tour of James River Plantation Homes
or	
2:00-5:00 p.m.	Advanced Bee School — Day 2 Instructors — Dr. Elton Herbert, Dr. R.A. Morse, Dr. J. Tew

Evening Program

5:00-6:30 p.m.	Cocktail Reception to Meet the Speaker (Cash Bar)
8:30-10:00 p.m.	First Annual SSBF Bee Bowl North Carolina vs Virginia

Tuesday — Day of History — November 13, 1984

Morning Program

8:00-9:00 a.m.	Registration
8:30 a.m.	Opening Remarks — Dr. R.D. Fell, Moderator
8:45 a.m.	"Development of the Beekeeping Industry — A Historical View" Speaker — Dr. Roger Morse, Cornell University
9:30 a.m.	"My Life and Times" Speaker — Rev. L.L. Langstroth, Philadelphia
10:15-10:40	Coffee Break
10:40-11:00	"The A.I. Root Co. and its History" Speaker — John Root, Chairman, A.I. Root, Inc.
11:00-11:20	"Dadant & Sons — A Historical View" Speaker — T. Dadant
11:20-11:40	"Queen Rearing in the U.S." Speaker — H. York
11:40-12:00	Colonial Beekeeping in the Old Dominion" Speaker — Mr. Mark Berninghausen, A.T.I.—O.S.U.

Afternoon Program

1:00-5:00	Beekeepers Tour of Colonial Williamsburg

Evening Program

6:30-10:00	SSBF Banquet — Colonial Style

Wednesday — November 14, 1984

Morning Program

8:00-9:00 a.m.	Registration

(Continued on next page)

9:00 a.m.	Opening Remarks — Steve Forrest
9:15 a.m.	Business Session
10:00-10:30	Coffee Break
10:30-10:45	Save the Bees Campaign, Report— Steve Forrest
10:45-11:30	Buzz the Schools — Education Campaign Kick-off
11:30-12:00	Honey Research, Promotion and Consumer Information Act — Report and Comment
12:00-12:30	Check-off Program — Industry View — Binford Weaver
12:30-12:45	Bee Mites in the U.S. — Status Report Dr. H. Shimanuki, USDA

Afternoon Program

2:00-5:00 p.m.	Advanced Bee School — Day 3 Special Session — Queen Rearing and Artificial Insemination — Dr. Larry Connor
2:00-4:00 p.m.	State Association Leaders Round Table Workshop Moderator — Steve Forrest

SSBF Advanced Bee School

The Southern States Beekeeping Federation's Advanced Bee School will be taught by some of the country's leading experts on honey bees and honey bee biology. The course is designed for beekeepers who have several years of experience keeping bees and want further instruction at a higher level than courses offered anywhere else in the country. Topics covered in the course will include:

Queen Biology and Requeening

The Use of Honey Bees for Pollination

Bee Diseases with Emphasis on the Bee Mite

Making Comb Honey

Winter Biology and Successful Wintering of Bee Colonies

Nutrient Requirments and Feeding Bees

Outdoor Colony Manipulation

Queen Rearing and Artificial Insemination

The Advanced Bee School will involve nine hours of instruction, including hands-on exercises with bee colonies. Total cost of the Program will be $25.00 per person or $35.00 per family (for immediate family members only). Individual daily sessions may be taken at a cost of $12.00.

The course is divided into three days and will run Sunday, November 11, 1984, from 2-5 p.m. each day.

Iowa Honey Producers Association

The annual meeting of the Iowa Honey Producers Association will be held at the Starlite Village Motel, Ames, Iowa on October 26, and 27th.

The general program will begin Friday afternoon, the 26th, with a banquet that evening and continue throughout the day of the 27th.

Speakers whowill be appearing on the program include: Gary Peterson, County Extension Director, Albia, Ia.; Berna Johnston, Socarro, New Mexico, beekeeper; Dr. Nelson Moyer, Microbiologist, University of Iowa; Richard Adee, honey producer, Bruce, SD; Dr. Martha Gilliam, Research Microbiologist, USDA Laboratory, Tucson, Arizona.

Room reservations are on your own. The following is a list of motels that are available in the area:

Starlite Village, Best Western, 13th & Dayton, (515) 232-9260
Ames Travelodge, 229 So. Duff, (515) 233-8600
Holiday Inn—Gateway Center, P.O. Box X, (515) 292-8600
Koelker Motels, R.R. 3, (515) 292-1551 or 292-8600
Ramada Inn, 1206 So. Duff, (515) 232-3410
Silver Saddle Motel, Hwy. 69 & New Hwy. 30, (515) 232-8363
University Inn, 316 So. Duff, (515) 232-0280

Display space for commercial exhibits will be available for a nominal fee.

For more information, registration froms and meal reservations contact: Glen L. Stanley, State Apiarist, Iowa Department of Agriculture, Wallace Building, Des Moines, Iowa (515) 281-5736.

Worcester County Beekeepers Association

Worcester County Beekeepers Association's Honey Queen Chris Messier was crowned Massachusetts Honey Queen at the Massachusetts Federation of Beekeepers annual meeting at Tufts New England Veterinary Medical Center, Grafton, Ma., June 16, 1984.

She will represent Massachusetts Federation of Beekeepers at the Eastern Apicultural Society Conference August 8-11, 1984 at the University of Rhode Island, Kingston, R.I.

1985 CONVENTION
Beekeepers Of North America!
Plan Your Vacation Now!
Bask In Sunshine In January!
Visit Florida's Attractions!

The 1985 Convention of the American Beekeeping Federation at the Hyatt Regency Hotel in Tampa, Florida, January 14-19, 1985, can be your sunny vacation with much to see and learn.

The convention program will follow the theme of "Marketing and Promotion" with speakers addressing the problems of selling honey, pollen, beeswax and other products of the hive with the greater emphasis on honey.

There are to be exhibits of beekeeping equipment, supplies, and products in the hotel during the convention. There will be the American Honey Show and Auction also.

More Honey Queens are expected to enter the competition for the titles of American Honey Queen and American Honey Princess for 1985 that ever before.

The tentative schedule starts:

Monday, Jan. 14, 1985

9:00-5:00 p.m.	Executive Committee (10 people) Conf. Style
1:00-5:00 p.m.	Registration
1:00 p.m.	Set up exhibits & Honey Show
8:00-10:00 p.m.	State Honey Queen Chairmen Meeting

Tuesday, Jan. 15, 1985

8:30-5:00 p.m.	Registration
9:00-Noon	Bd. of Directors (75-100 people) Theatre style
12:00 Noon	Exhibits and Honey Show Open
1:30-4:30 p.m.	General Session (500 people — Theatre style)
4:30-6:00 p.m.	Honey Industry Council (10 people)
8:00-10:00 p.m.	Honey Queen Reception

(Continued on next page)

Secretary of Agriculture, John Block presenting the Sweepstakes Trophy won by St. Clair Beekeeper's Association at the Bee and Honey show at the 1984 Illinois State Fair.

Others in the picture reading from left to right are Eugene E. Killion, Superintendent of the Honey Show, Robert Holloway, President of the Illinois State Beekeeper's Association, Udell Meyer, Apiary Inspector, Secretary of Agriculture, John Block and Director Larry Werries of the Illinois Department of Agriculture.

Wednesday, Jan. 16, 1985

7:00-9:00 a.m. A.B.F. Membership Breakfast (75-100)
8:30-5:00 p.m. Registration
9:00p5:00 p.m. General Session
2:30-4:30 p.m. Nat'l. Honey Packers & Dealers Directors Meeting (20)
7:00-10:00 p.m. Honey Hoedown — Spirit of Tampa — Boat Cruise

Thursday, Jan. 17, 1985

7:00-9:00 a.m. Mid US Honey Producers Breakfast (12-15)
8:30-5:00 p.m. Registration
9:30 AM-12:30 PM Ladies Auxilliary Brunch (175-200)
9:00 AM-4:00 PM General Session
2:30 PM Nat'l. Honey Packers & Dealers Open Meeting (250)
4:15 PM-6:15 PM Honey Show Auction
6:30 PM-7:30 PM Social Hour
7:30 PM — Queens Coronation Dinner (350-400)

Friday, Jan. 18, 1985

7:30—9:00 AM Nat'l. Honey Packers & Dealers Breakfast (15-20)
9:00—NOON General Session
1:30 PM-4:30 PM Annual Business Meeting (250)
6:30 PM-7:30 PM Social Hour
7:30 PM-Midnight Annual Banquet and Dance (500)

Saturday, Jan. 19, 1985

7:30-9:30 AM Honey Industry Council Meeting (12 people)
10:00 AM-12:30 PM Board of Directors (75-100)
2:00—6:30 PM Executive Committee (10 people)
(Time to Play)

The Hyatt Regency Hotel has said that beekeepers and families can "Come early and stay late" at the same convention prices.

Early registration for the convention (Not hotel registration) can save you up to 20% on the fees for registration and other tickets may be had for less. Request your registration packets from the American Beekeeping Federation, Inc. by writing to:
Frank Robinson, Secretary — Treasurer, 13637 NW 39th Ave., Gainesville, Florida 32606.

You may get a copy of the rules for the Honey Show from Frank Robinson or write to Larry Cutts, 909 W. Highway 90, Chipley, Florida 32428, (Tel: 904-638-1637).

Lyn Craig was selected by the Wiregrass Beekeepers Association to be their 1984-85 Honey Queen. The 17-year-old senior at Northview High School in Dothan, Alabama, will represent the association in the National Peanut Festival parade, at the Alabama State Beekeepers Convention, and at other activities during the year.

Some Guys Will Do Anything To Get A KISS From The American Honey Queen!!!

August 3rd started the Larimer County Fair in Loveland, Colorado. The Northern Colorado Beekeeping Association had a booth and at the last minute asked JoAnn Weber if we could possibly have the American Honey Queen for the weekend. Luckily enough she was between appearances. You all don't know what you are missing if you haven't had this beautiful, graceful, talented queen in your area.

As the Larimer County Fair was going on so was the Weld County Fair. Carol made appearances at both fairs, but most of the time was spent with the NCBA booth. She also had a store promotion at Toddy's, in Greeley, for Rice's Lucky Clover Honey and made honey sundaes, which everyone enjoyed.

Carol is very gracious and loves the industry. Her family has been in beekeeping all of her life and she knows what she's talking about. She was interviewed by four radio stations. This is the

(Continued on next page)

Miss Carol Marie Tschida, 1984 American Honey Queen and Dave Primer, Wellington, Colorado.

first time any queen has been to Colorado and we didn't know what we had been missing. Carol appeared in the county fair parade. As a drawing card we announced a bee beard. One of the association's hobbyists, Dave Primer from Wellington, Colorado, with the assistance of Cynthia Manuel (formerly of A.I. Root) volunteered to do the beard. It was a great success, especially when the Honey queen kissed him. We wanted to prove that bees are helpful not harmful. Our booth was set up mainly for educating the public on bees and beekeeping. With the help of Dr. Richard Nunamaker, of the Laramie Bee Lab, and Dr. Robert Simpson, a professor of entomology of Colorado State University, commercial beekeepers, and hobbyist beekeepers answering questions 12 hours a day, we think for our first it was a success. Our booth was crowded most of the time as we handed our Carol's honey recipes and people took great interest in our displays.

Our answer to promotion is for EVERY ASSOCIATION to teach the general public how to use HONEY. We should educate not to spray. Even if it's a small county fair, thousands walk through and are interested.

The NCBA started in February with 14 interested people. We have since grown to 54, but do not require a membership. Hobbyists and commercial beekeepers alike are enthusiastic because we have had films for the beginner and films on diseases presented by Dr. Richard Nunamaker, of Laramie Bee Lab, and we have found there's a lot to learn and a lot to share. The NCBA's main goal is working on educating the general public on bees and beekeeping and promoting honey.

A Fine Young Man

By TOM E. CLARKE 15531-9th NE Seattle, WA 98115

The year after I acquired my first hive of bees was warm and productive, and by midsummer, after picking up several queenright swarms and dividing the original colony, my row of eight or so hives was crowding close to the board fence between my property and that of the neighbor immediately behind.

My neighbors were newcomers to the community with several children, and one hot August afternoon, when I was examining a recently-acquired swarm, garbed in my stifling bee suit, veil and gauntlets and with smoker puffing, I looked up and saw one of the neighbor boys, a lad of about 11, leaning over the fence watching my activities. "Hello," I said, "that can be a dangerous place to be, son."

"I'm not afraid of bees, sir."

"Neither am I, but I get stung anyway now and then, if I get careless. What's your name?"

"Tim."

"I'm Tom."

"I hope you don't mind if I watch, do you?"

"No, but I wouldn't want your dad to sue me if some rogue bee came along and let you have it where it hurts."

"He won't."

Almost everyday thereafter when I was dressed for action and going through a hive I'd look up and see the handsome, blue-eyed Tim watching. Now and then he'd ask what I was doing, and as I worked I explained what I was doing and why, now and then taking a frame over for him to examine and learn the difference between brood and capped and uncapped honey. Once I caught a queen and let him have a close look at her.

Another time, while doing yard work I heard the buzz of an approaching drone and, reaching up, grabbed the noisy freeloader out of the air and took it over to the fence and called to Tim who was weeding his family's garden on the other side, "Here's a pet for you, Tim."

When he came warily to the fence I showed him the big black male, and after learning that it could not sting, got a jar to put it in.

He was an extremely curious boy and intelligent enough to know what questions to ask, many of which I couldn't answer without first consulting *The Hive and the Honey Bee*, thus educating myself as well as my young friend on the other side of the fence.

One afternoon, when I went out to open a hive I took with me a small jar of the previous season's crop, and when he came to watch I pretended to take it from the hive and gave it to him as a gift from the bees, then explained the procedure of extracting honey, and he extracted from me a promise that he could help next time I had a spin-off. I was going to need some willing help to turn the crank that fall because my elder son would be in the East attending MIT and the younger was in Israel working in a kibbutz.

Once Tim asked how I got involved in beekeeping and I told how, as an Olympic Peninsula farm boy my favorite hobby had been hunting for and robbing bee trees in the woods around our place. I told him, too, that when I was in the Civilian Conservation Corps in 1935 I'd earned a reputation for being fearless because when work stopped on our brush-slashing crew because a yellow jackets' nest was too close to the job, it was I who'd cut the brush close by so the work could proceed. I had never been a fighter, but would stand my ground in the face of angry, stinging insects when all the tough, bare knuckle guys had taken for the hills. I'd always had a desire to to have bees, but it wasn't until I settled in suburban Seattle that I was able to legally do so. Then one day Tim said that he wished he could have bees sometime, too, and I told him that the next time I got a call to go pick up a swarm in somebody's yard, that I'd take him along, dressed in my wife's bee outfit, show him how the job was done, give him a swarm box and he'd have his bees.

But, sadly, this was never to happen because, in the interim, their house caught fire one night and he died from smoke inhalation when he returned inside the house to determine if everyone had safely gotten out. What a tragedy, because young Tim would have been a great beekeeper, something that my own sons weren't at all interested in, having too often heard my wails of agony when I'd gotten careless and taken the lid off a hive on a rainy day without first dressing properly for it.□

BUY & SELL

Classified rates: 49 cents 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) count as one word. Not less than 10 words accepted. Copy or cancellation orders MUST be in by the 1st of the month preceding publication. Send classified ads to the A.I. Root Company, Advertising Dept., GLEANINGS IN BEE CULTURE, Box 706, Medina, Ohio 44258-0706 **Note: BLIND ADS: Any ad sent in that does not contain the seller's Name and Address within the ad, will be charged an additional $6.50 per month.**

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

The INTERNATIONAL BEE RESEARCH ASSOCIATION urgently needs your membership and support to continue its work of publishing informatin on bees, beekeeping and hive products. Write for details about publications and the benefits of membership to USA Representative, H. Kolb, P.O. Box 183, 737 West Main, Edmond, OK 73034 (phone (405) 341-0984); or to IBRA, Hill House, Gerrards Cross, Bucks SL9 ONR, UK, regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Mail inquiries from USA: H. Kolb, P.O. Box 183,, 737 West Main, Edmond, OK 73034, Phone: (405) 314-0984. IBRA PUBLISHES: **Bee World,** a quarterly journal for the progressive beekeeper. **Apicultural Abstracts,** a survey of scientific literature from all languages. **Journal of Apiculture Research,** for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership $1. Specimen copies of **Bee World**; **Journal of Apicultural Research** or **Apicultural Abstracts** from INTERNATIONAL BEE RESEARCH ASSOCIATION, Hill House, Gerrards Cross, Bucks. SL9 ONR, England. 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

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

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

INDIAN BEE JOURNAL Official organ of the All India Beekeepers' Association, 817, Sadashiv Peth, Poona 411030. The only bee journal of India Published in English, issued quarterly. Furnishes information on Indian bees and articles of interest to beekeepers and bee scientists.

Annual subscription postpaid in foreign countries: For individuals US $7.00 for institutions, companies and corporate bodies US $10.00 or it's equivilent, to be received in advance by IMO or bank draft, payable in Poona (India). TF

WANTED

WANTED—All varieties bee gathered pollen. Must be clean and dry. Pollen traps available. Hubbard Apiaries, Onsted, Mich. 49265. Phone: 517-467-2151. TF

WANTED — Old Beekeeping Books and Bee Journals. James Johnson, 107 State Ave., Terra Alta, W.V. 26764. TF

Wanted: Hardworking Full-time professional queen breeder. Must have many years experience in all phases of queen production as well as other general apiary work. South Atlantic state location. Salary negotiable. Contact: Huck Babcock, P.O. Box 2685, West Columbia, SC 29171. Phone: 803-256-2046.TF

Wanted to buy on shares 250+ strong colonies and equipment. Jimmie Vickery, Route 3, Grapeland, Texas 75844. 214-478-3213. 10/84

FOR SALE

Protective Clothing for Beekeepers. Write now for brochure. B. J. Sherriff, Dept. GBC P.O. Box 416, Nacoochee, GA 30571 TF

INSEMINATION DEVICES. For prices write Otto Mackenson, Box 1557, Buena Vista, CO 81211 TF

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