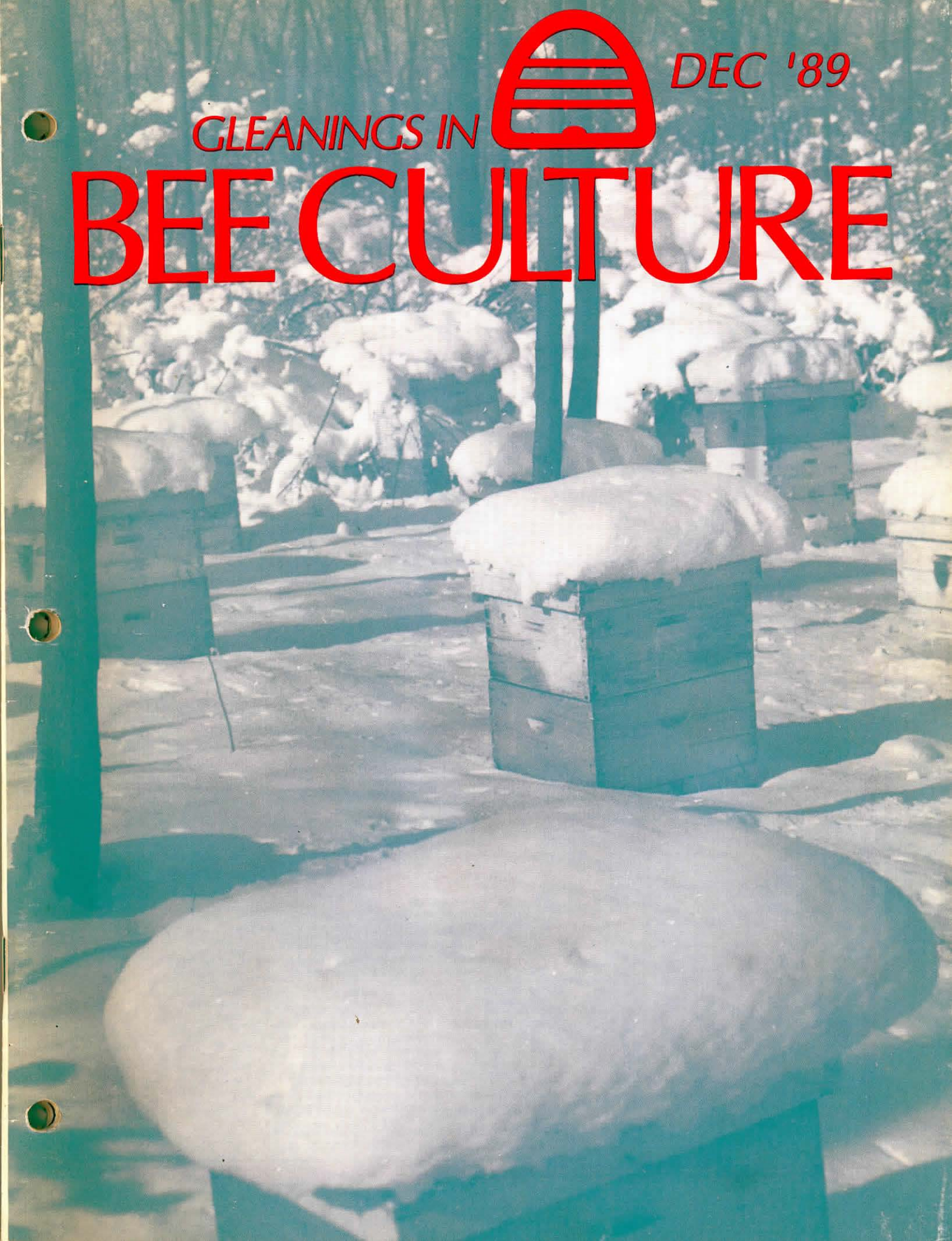


DEC '89

CLEANINGS IN



# BEE CULTURE





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Cynthia Stephens	Production Coordinator
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Buzz Phillips	Circulation Director
Diana Sammataro	Equipment Editor

**Contributing Editors:**

Clarence Collison	•	Ann Harman
Elbert Jaycox	•	Roger Morse
Steve Taber	•	Richard Taylor
Charlie Mraz		

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COVER . . . Although we're not sure, we suspect that even under all this snow our bees are celebrating the holidays, too. After all, a bit of Holiday Cheer will warm even honey bees.

From all of us at *Gleanings in Bee Culture* and The A. I. Root Company — Merry Christmas and Happy New Year!



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Vol. 117, No. 12

116 Years Continuous Publication by the Same Organization

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## THE INNER COVER

The opportunity to celebrate the beginning of a decade doesn't come along very often. Seven, maybe eight times for most of us. Nine or ten if you're lucky. And it seems the more of these you get to celebrate, the greater the tendency to mark your life in ten year chunks.

I honestly don't remember the 40's, since I was only around for a couple of them, but I have some recollection of the 50's. Puberty hit then, but Korea and Eisenhower also stand out.

The 60's are still vivid. Almost like yesterday, it seems. High school, college, Vietnam. Some very good, and some very bad memories.

During the 70's there were a few highlights, though none equal the birth of my daughter. The rest seem to pale in comparison. Even today.

The 80's. Reaganomics, job cuts and Connecticut. But every cloud... and all that. From Madison to Medina with ten years of real-life agriculture in between. This was the decade of research and production, picking rock and pruning trees, pulling weeds and moving bees. And making a magazine.

But, alas, another decade slips away. Like so many before.

So, what's in store for the next ten years? Some things are clear, at least in the world of beekeeping. The African honey bee will arrive and make itself to home. There are lots of folks who would just as soon that didn't happen, but it seems inevitable. The next best thing to do is, like unwanted in-laws, make life miserable while they're here so the stay is short and not entirely disrupting.

Some other obvious trends will continue, I think. There will be fewer places to put bees. At least fewer good places. More houses, apartments, shopping malls, freeways, airports and the like. The builders and tax collectors call it progress, but I'm not so sure.

The impact these concrete invasions have on the environment will come under closer scrutiny though. Already there are concerns being voiced about waste disposal, water run-off and over crowding. Growth will continue, but there are already some checks in place and, I hope, more to come.

Agriculture is a hard one to predict. With something like 80% of our population living within fifty miles of either coast or the gulf, you'd think we'd be left alone — but such will not be the case.

The incredibly close attention to pesticide use will not let up, I feel, which is both good and bad. Certainly chemicals that kill need control. But if food and fiber production are to stay competitive with imports, the controls must be sound and scientific — not unfounded hysterical across-the-board bans on anything that can go into a sprayer (or a beehive). This situation will bounce back and forth awhile, then settle down and begin to make sense again. But it will take a decade to decide.

Honey sales. Boy, is that a tough call. With the increased promotional efforts and the heightened awareness of things 'natural' and 'pure', domestic retail sales should continue to comfortably increase. Though I'm not sure if there will be a corresponding increase in

*Continued on Page 665*

## NEXT MONTH

Evolution is the theme for the January issue, since much in our world is changing. First, the African honey bee has evolved, and will continue to do so — 1990 signals the beginning of the 'Decade of The Honey Bee', since most everything that's supposed to happen to our industry will occur next year. From Africa to Brazil to Texas — the trip revisited.

But more is happening next year. The basics of insurance coverage for beekeepers — whether you own one hive or one thousand, will be explored in depth. With the changes taking place you can't afford to guess, and hope — be prepared — read it here next month.

The physical world around us never stands still, and a phenomena is occurring at an alarming rate in parts of the U.S. This change — going from lush green to dry brown and wind swept is called desertification, and beekeeping and beekeepers will be (and are) affected. Desertification — a disaster in the making in our own backyard. Can beekeeping help? Find out, next month.

**Evolution:** Development from the primitive to the specialized.

Magazines evolve too, and this month you're seeing a major change — but next month there will be even more, and even better changes.

**Evolution** — Right here, next month. □

# MAILBOX



## ■ Wax, Microwaves, Solar Melters, and More

I enjoyed reading your "Simply Wax" article in the August *Gleanings*. I thought you might be interested in the experience of someone with only a few hives who has to keep it simple.

I put the cappings into a cheese-cloth bag, similar to a jelly bag, and let them drip over a pan in a warm room for a week or more. The sticky cappings and any remaining granulated honey is then put into gallon plastic milk or cider jugs that have had their top half cut off. It doesn't take long to liquify the wax in a microwave so you can watch it to avoid mishaps. Cooled you have a clean wax plate on top, frosted with debris on the bottom, and a strong, dark honey underneath. The honey can be used in cooking or fed back to the bees.

Despite a very efficient solar melter, I discovered that I was throwing away a lot of wax when I melted old comb. Putting hot slumgum through a small homemade press, similar to a fruit or wine grape press, I found that I could extract a third of its weight in wax, and that from stuff that had dripped dry after many hours, even days, in the melter. It doesn't look like capping's wax, the colors range from dark amber to milk chocolate, but it's OK for candles. It's tedious, you can do only a small amount at a time, but the results are interesting. The residue of *that* process is a dark brown, dry, friable material that you can compost, etc.

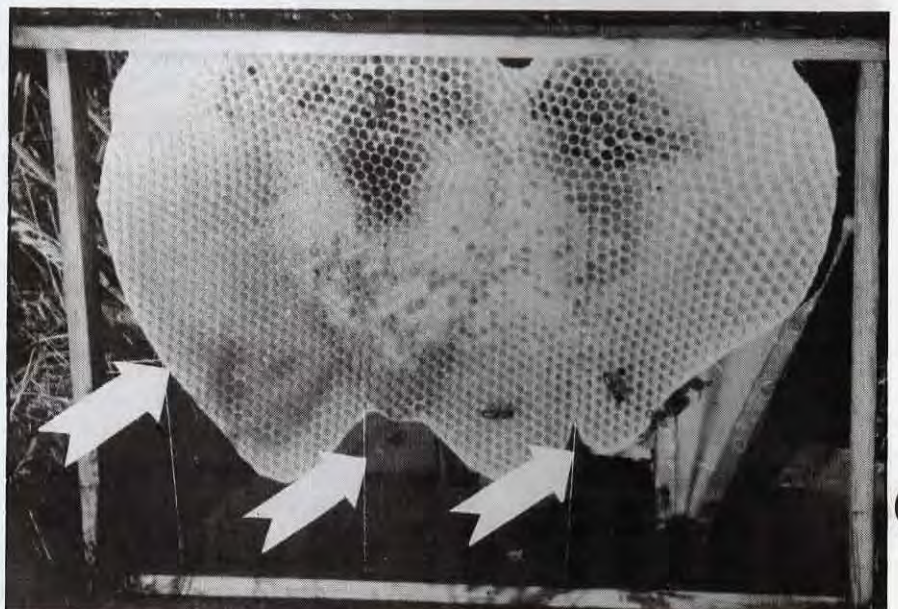
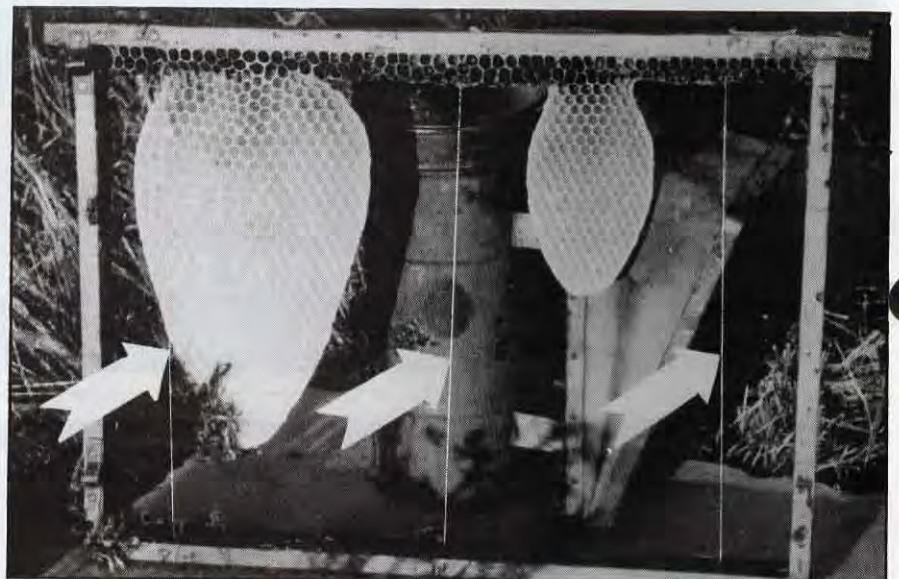
Bernard Rice  
New York, NY

## ■ Reasons Why

I read your article in the Sept. magazine about the decline in attendance at the bee meetings. I belong to Mahoning and Columbiana Bee Organizations. I am not in the business

any more. Around Salem there used to be five people keeping bees and they all quit. The reason why is our stupid legislators in Washington subsidized the big bee companies and then they gave away the honey to senior citizens. This was where most hobby beekeepers sold

their honey. So in turn the small beekeepers have no interest in bee meetings. The young people are not interested in beekeeping. As an example, I started four nephews three years ago, and not one of them is keeping bees anymore. Now most people here have





# DECEMBER Honey Report

December 1, 1989

## REPORT FEATURES

Summary: R=Range of all prices.

A=Average prices across all regions.

L=Last month's average.

Comments: Price Index is a ranking system comparing a region's prices to other regions.



	Reporting Regions								Summary		
	1	2	3	4	5	6	7	8	R	A	L
<b>Sales of extracted, unprocessed honey to Packers, F.O.B. Producer.</b>											
<b>Containers Exchanged</b>											
60 lbs. (per can) White	42.50	40.14	36.50	37.20	38.00	34.25	41.50	36.60	33.00-43.00	38.76	48.25
60 lbs. (per can) Amber	41.50	32.97	34.00	33.60	36.00	31.10	38.00	35.10	30.00-43.00	35.05	37.58
55 gal. drum/lb. White	.51	.30	.39	.62	.40	.58	.57	.46	.30-.55	.49	.46
55 gal. drum/lb. Amber	.50	.28	.37	.56	.37	.51	.52	.44	.28-.60	.46	.42
<b>Case lots — Wholesale</b>											
1 lb. jar (case of 24)	28.55	28.44	26.00	24.95	24.00	23.85	26.25	29.50	22.80-38.40	27.23	26.52
2 lb. jar (case of 12)	27.15	27.04	20.10	23.75	25.50	24.30	28.25	27.18	20.10-37.20	26.02	25.13
5 lb. jar (case of 6)	30.45	27.50	25.00	24.95	26.60	25.90	27.65	26.10	24.00-30.90	27.27	27.54
<b>Retail Honey Prices</b>											
1/2 lb.	.92	.98	.90	.94	.75	.95	.97	.92	.75-1.19	.93	.95
12 oz. Squeeze Bottle	1.55	1.58	1.35	1.44	1.30	1.10	1.27	1.48	1.10-2.00	1.43	1.39
1 lb.	1.67	1.62	1.40	1.78	1.35	1.55	1.55	1.55	1.30-2.00	1.58	1.56
2 lb.	2.97	2.89	2.50	3.48	2.39	2.55	2.32	2.62	1.75-3.89	2.76	2.80
2-1/2 lb.	4.00	4.18	3.10	—	3.30	3.22	2.65	—	3.10-4.98	3.62	3.60
3 lb.	4.20	4.24	3.90	3.25	3.75	3.60	3.63	3.50	3.25-4.50	3.82	3.83
4 lb.	5.30	5.30	4.90	4.70	4.50	4.22	4.42	—	4.20-5.70	4.20	4.26
5 lb.	6.75	6.01	5.70	6.63	5.69	5.40	6.33	5.70	5.40-7.00	6.11	6.05
1 lb. Creamed	2.00	1.09	1.30	1.59	1.69	1.60	1.80	1.68	1.09-2.00	1.66	1.65
1 lb. Comb	2.50	1.88	2.00	3.20	2.60	1.85	2.77	3.38	1.50-4.50	2.08	2.58
Round Plastic Comb	2.12	2.63	2.10	1.85	1.70	1.65	1.85	1.85	1.65-3.00	2.05	2.07
Beeswax (Light)	1.12	1.10	1.00	1.17	1.10	.90	1.03	1.17	.90-1.25	1.08	1.00
Beeswax (Dark)	1.00	1.00	.90	1.05	1.05	.80	.95	.97	.80-1.10	.96	.93
Pollination (Avg/Col)	28.75	20.00	—	28.75	20.00	19.00	27.00	26.50	19.00-32.50	25.40	24.29

## MARKET SHARE

The monthly honey report is looking for a lot of good reporters. We want to beef up our field staff as much as possible — and need your help. If you sell honey, retail/wholesale/combo, and can fill out most of our price list every month, we want your input. For your efforts we'll send you a free subscription to our magazine, and put your star on our map. We especially need reporters in regions 1, 3, 4, 5, 6, 7, 8 (yes, all but 2!). Call or write if you are interested.

### Region 1

Price Index 1.00. Sales steady to increasing, and prices strong, and promising to get stronger. Crop shortages in much of region due to bad weather during spring/summer. Fall crops average to poor — all point to low stores, short harvest and higher prices.

### Region 2

Price Index .92. Sales steady, but variations exist. Some areas slow, while others heating up. Prices steady to increasing a bit below, but most colonies seem strong. Hurricane Hugo seems to have caused little problems, except perhaps for a bit too much rain.

### Region 3

Price Index .84. Reporters are needed to help us complete this region. If interested call or write the Editor. Reporters are compensated for their assistance. Sales steady to improving a bit. Prices steady. Fall crops are mostly below average.

### Region 4

Price Index .85. Prices unchanged for the most part; and sales steady. Shortage of light honey showing up. Feeding necessary in many areas due to poor

summer and fall flows. Varroa spread increasing, and treatments ongoing.

### Region 5

Price Index .88. Prices down a bit, but not much. Sales steady, and increasing as weather cools. Dry weather hurt fall flow so watch for feeding needs.

### Region 6

Price Index .82. Prices dropping just a bit, sales still somewhat sluggish, but will increase as new crop becomes available, and holidays get closer. Western areas still extremely dry, but east areas doing well. Bears causing problems in parts of AZ and NM, and fire ants in TX.

### Region 7

Price Index .94. Prices increasing as cooler weather closes in, because sales strong. Area still primarily dry, in need of sub-soil moisture. Varroa moving into area! Yields higher than expected, but some spots still low — Check.

### Region 8

Price Index .87. Prices steady on retail level, but wholesale dropping, even with reduced harvest in most areas. Sales average (south) to strong (north). Dry conditions still prevail in many areas.

Interested in becoming a  
"Honey Reporter"? Contact the Editor today!

# MAILBOX

Continued from Page 663

enhance mite resistance in honey bees 2 years ago. I would dearly love to receive some of this stock to put into our breeding program and I think many other beekeepers would also benefit from receiving this stock as well. Voice your opinion to: Mr. Philip Lima, Staff Specialist, APHIS, USDA, Room 629, Federal Building, Hyattsville, MD 20782.

Steve Taber  
Vacaville, CA

## ■ Losing Sales

Many advertisements for bees claim the bees are "Mite Free". Though the claim is probably true, there is always the possibility that a source that was mite free when last inspected has since been infested.

The use of Apistan strips should prevent the spread of Varroa mites from infected areas to currently mite free areas. All bee suppliers should offer potential customers the opportunity to purchase bees protected with Apistan. Yet, to my knowledge, only two advertise the availability of Apistan strips.

If a supplier will ship bees with Apistan, but is not indicating the availability of this service in its advertisements, then the supplier is losing sales.

Demorest B. Howard  
McNeal, AZ

## ■ A Helping Hand

In the past there were bee gloves sold with metal screening on the cuffs for ventilation. More recently they have used a plastic mesh. But my concern is with those who still have a pair with the metal screens that are corroding away. I've attempted to replace the screen but it is a real task. Since, I have reworked a pair of gloves — the leather was good — using that plastic mesh available at cloth shops for some sort of cross stitching. It can be sewn in or used in new cuffs. I remade the whole cuff using some heavy canvas.

Stanley Combs  
Pittsboro, NC

## ■ Bee Bee Tree

Recently I came across a back issue of *Gleanings* which highly recommended the Bee Bee Tree (*Evodia Danielli*) as a nectar source. Did this tree ever live up to its promised potential? And if so, is it available? I receive numerous catalogs specializing in native and/or wildlife plants but I have never seen this species listed.

Karen Jescavage-Bernard  
Croton-on-Hudson, NY

**EDITOR'S NOTE:** This tree has been highly touted as a good nectar source, but seeds, as stated above are difficult to locate. Also, because it takes several years to grow to flowering size, follow-through research is skimpy. Anyone have good, up-to-date information?

## ■ Rubbed Wrong Way!

I must raise my voice to protest any comment or connection with this "Fur Industry" group you wrote about in a recent *Globe*. The trapping of animals and their torturous murder by tens of millions for reason of fashion demand must end, and immediately! There is no excuse such as "American tradition", "heritage", or "Constitutional right" to perpetuate this anachronistic endeavor. It must end! The sooner, the better! As to the trappers, they can find other occupations. Their "product" has been largely replaced by man-made fibers. Furs are for fashion only and for the irresponsible rich. Frivolous, unnecessary luxury, obtained by the plunder of our wildlife which these trappers want to manage by torture and death. This occupation is indefensible on both moral and practical grounds: like advocating the step-up of executions because the hangman needs the job. Nobody, nobody has the right, constitutional, traditional or otherwise, to inflict torture, suffering, extinction and death on living, feeling, innocent creatures! Nobody! Anywhere in the world! Association with this group is objectionable and undesirable!

Alexander Alt

**EDITOR'S NOTE:** There is a saying — politics and persecution make strange bedfellows. When animal rights groups strike out, they use a shot gun approach — not a well aimed bullet. Beekeeping, in the eyes of some is no better than trapping mink or fox.

INNER COVER... From Page 660

beekeepers' incomes. The growing rift between the have's and the have-not's, coupled with the trend of reduced subsidy payments, will have telling effects.

Traditionally, most honey sales are not made to high-end income households — those most able to pay higher (read appropriate) rates for honey. Retail sales will remain primarily at the other end of the income spectrum, I think, which means that price increases will be harder to come by. So, even though more will be sold, net profits will not jump accordingly. Of course, both imports and exports will increase, but the net effect of these will be negligible for most of us.

To make decent profit advances, producers will have to increase efficiency. This will be by using the bees more (pollinating more crops, moving for more honey flows); producing more honey/hive; having more hives; reducing the cost of honey production/hive (labor or materials); or some efficient combination of these. Reducing costs will probably be easier than increasing production, considering the changes in places to put bees.

The 90's will bring ripples of change, I think. Some good, some not. But I don't foresee these ripples becoming tidal waves. To grow is to change — and frankly, I see lots of growth for this industry.

Happy New Decade!

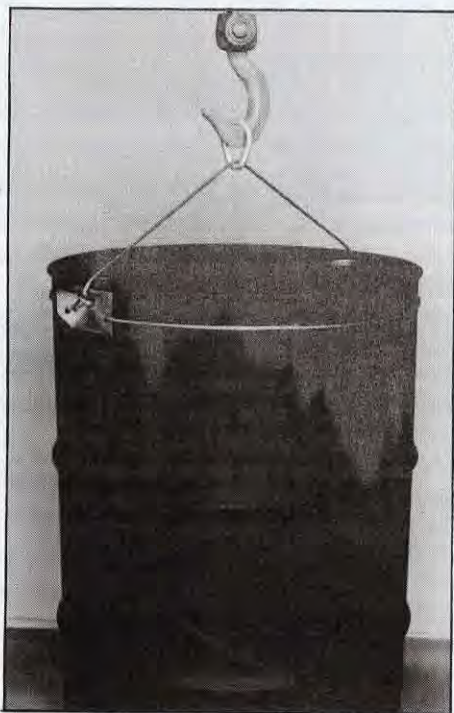
Kim Flottum



# Great Ideas!

The patented Bold Eagle Barrel Harness now has a heavy-duty model. Free Enterprise Systems introduces the HEAVY DUTY HARNESS!

Galvanized aircraft cable grips the circumference of the barrel under the lip, and stainless steel brackets prevent any slippage. It has a galvanized lifting eye to accommodate a hoist hook. The Harness fits all drums 55 gallon and smaller, and lifts steel, plastic, fiber, and open-top drums — and it will not damage the drums.



Although utilizing all steel components, this unique device weighs only three pounds — yet has a rated capacity of 1,100 pounds. It is extremely simple to use, and easy to store when not in use.

A price of only \$55, including shipping, makes the HEAVY DUTY HARNESS easily affordable for all who handle barrels. □



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## Book Review

### The Humble-Bee

by F. W. L. Sladen

While they may produce less honey than honey bees, many beekeepers find bumble bees to be equally fascinating to watch and study. The natural history of the bumble bee was summarized in the style of the late Victorian era naturalist by F.W.L. Sladen in 1912 with the publication of *The Humble-Bee*. By any measure it is a classic work. The first monograph on bumble bees to appear in English, it is filled with considerable scientific observations, most of which have been proved correct by later observers. And it is written in an engaging and absorbing style which will please most readers.

"The charm of *The Humble-Bee* derives partly from Sladen's intimacy with his subject, partly from the straightforward way in which he shares his own emotions with the reader. Unlike colonies of honeybees, which number many thousands, those of humble-bees are quite small, containing no more than 200 or 300. Sladen likened them to large families, and his interest naturally focuses on the "central and dominating personage upon whose genius and energy the existence of the race depends" — the queen." — *The Independent*

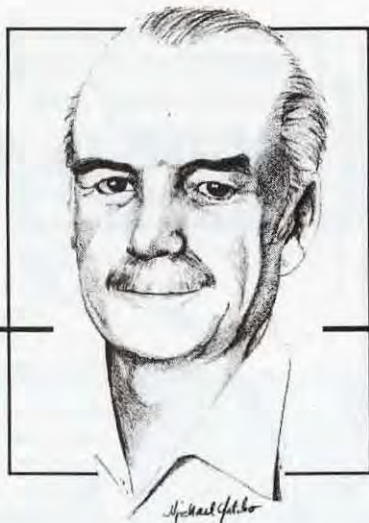
Sladen was also a beekeeper, and dedicated his life to the study and keeping of bees. He made a living from the sale of honey, breeding stock and queens, which he exported all over the world.

Sladen's work with bees is still frequently cited by modern researchers and bumble-bee biologists. His work on queen rearing (*Queen Rearing in England*) is very popular among beekeepers. It was Sladen who, having carefully studied an individual bumble bee, discovered how bees manage to pack the pollen onto their corbicula. And it was his pioneering and wholly accurate theory, fore-shadowing pheromone research, that chemicals are involved in the way a colony of honey bees communicates.

Associated with bumble bees (or humble bees, as he chose to call them) as a young school boy in Kent, Sladen produced a hand-lettered pamphlet when he was 16. This boyish work was praised by a leading bumble bee specialist of the time, and was the basic outline for *The Humble-Bee*. Both works have now been reprinted in a single deluxe 312 page hardcover edition by Logaston Press in Herefordshire England. It is offered in North America through Wicwas Press at \$25 (P.O. Box 817, Cheshire, CT 06410).

"With the resurgent interest in natural history — and the fragile status of bees in many areas — this book is a reminder of a more innocent age, and a tribute to a pioneering scholar."

— *Daily Telegraph*



# THE BEE SPECIALIST

ELBERT R. JAYCOX

6100 Shadow Hills Road • Las Cruces, NM 88001

## "Is the 'Dance' a Dead Language?"

Information exchange and acceptance is usually an odd and distorted process in beekeeping. New beekeepers learn this very quickly as they try to sort out the confusing mixture of advice and information offered to them by established beekeepers, books, magazines and other sources. Their own conceptions and beliefs about how things ought to be also influence their response to beekeeping information presented to them.

When I was teaching a group of beginning beekeepers from the Yemen Arab Republic, I found this behavior made it difficult for me to get some points across that are not generally questioned. One pertained to the occurrence of honeys poisonous to humans. The Yemeni students had difficulty accepting this well-known phenomenon, apparently because the Koran says that all honey is good. Such culture-based skepticism was easier to understand than that which caused the Yemenis to reject the idea of swarm prevention in beekeeping. After I had carefully outlined the several methods of preventing bees from swarming, including the effect of race, splitting, requeening, giving extra space, etc., one student told me very seriously that nothing could be done to reduce swarming because it was a natural process and we had no power to change it. A quick review of the same material, and the basic biological reasons for each item, made no change in his firmly established belief.

There is another system that oper-

ates to influence acceptance and rejection of ideas in beekeeping. You could call it "the power of the printed word". By this I mean that there is something reassuring about seeing things in print — so much so that, having seen it, we often reject a correction of wrong information given to us orally. In my bee-behavior class at the University of Illinois I never had a suitable text. All those available contained out-of-date ideas and examples. They also included ideas which the author accepted probably because of his lack of practical experience. I regularly tried to correct this material in lectures. Just as

regularly, the students liked what they saw in print and retained it.

A prime example of the difficulty of communication and acceptance of ideas relating to bees is the old conflict about whether honey bees have a "language" with which they tell other bees about sources of food as proposed by Dr. Karl von Frisch. This one involves scientists, seemingly with abilities to evaluate evidence, as well as lay people interested in bees. It looks now as if the tide is beginning to turn in favor of the idea that bees are recruited to food sources by the "odor-search" method proposed by Dr. Adrian Wenner.

Columbia University Press will publish a new book on the subject in early 1990: *Anatomy of a Controversy*:



Wenner and Wells argue, convincingly, that there is less going on than previously believed.

*The Question of a "Language" Among Bees* by Adrian M. Wenner and Patrick H. Wells. The book will examine not only the bee "language" controversy, but also the nature of the scientific method and its relationship to controversy in science. It will deal with the role of the different philosophies held by scientists and their effect on controversies such as this one. The authors note that when scientific disagreement strikes close to scientists, they tend to: 1) pretend there is none, 2) defer to "authorities" in the field, and/or 3) insist that more evidence is needed. Only recently have scientists been seen to suffer the foibles of all the rest of the population.

Sociologists and psychologists are looking more closely at the perception of science and its practice among scientists. Dr. Connie Veldink, a sociologist at Everett Community College, Everett, WA, has recently reported on her study of the role of evidence and scientific practice in relation to the honey bee "language" controversy. It was published in *Interdisciplinary Science Reviews* 14 (2): 166-175, 1989. Veldink makes it an interesting story by looking even at behind-the-scenes correspondence and surveying bee scientists and others familiar with bee communication. She found that the language theory lived on, despite evidence against it, for reasons which fall into seven categories, some of them hardly scientific in nature. Evidence is only one factor in scientific decisions.

Veldink's first reason for continued acceptance of the dance language theory is the attractiveness and popularity of the idea. It is a captivating story that has stimulated research not only in honey bees but in many other animals. The story has been repeated in so many

places and ways that people accept it easily. Also, the odor-search theory is not nearly so stimulative to our imaginations.

Secondly, the honey bee is so "delightful and capricious," with so many remarkable abilities, that scientists and ordinary people empathize with them and may even "root" for them to show more capabilities than they really have. Those same traits of the bees, and the difficulty of behavioral work with them, limited the number of researchers working on their foraging behavior during the main period of the "language" controversy, according to Dr. Veldink.

Humans interact directly and indirectly, and impressions of each person's nature influence acceptance of his/her work. Veldink notes that the perceived personal qualities of von Frisch and Wenner, major players in the controversy, had a distinct bearing on which one appeared to espouse the correct theory about how bees forage. Von Frisch was commonly looked upon as "distinguished and gentlemanly," whereas Wenner was "an aggressive young upstart". Wenner's negative approach was seen as detrimental to the acceptance of his conflicting research. Hostility toward him caused long delays in publication and, eventually, a move into other lines of research.

Veldink explains also how few experiments were performed to test and answer Wenner's new ideas, yet how many letters to editors, reviews, and other responses were a critical part of the controversy by always citing that very limited research as the "authority" and proof of the von Frisch theory. She calls them "clinchers," and quotes Stuart Altmann's idea that students

and scientists considered that further research was unnecessary because respected scientists accepted the language theory. Altmann is a well-known animal behaviorist.

Evidence in the controversy was somewhat like the jokes in universities about the *weight* of the publications you produce. The sheer volume of research on bees over a 20-year period, none of which contradicted von Frisch, made it difficult to accept that which did. Quantity prevailed over quality, at least in Wenner's eyes and those of us who agree with him.

Over time, the theory of von Frisch was converted into "fact," according to Veldink, and this left no room for additional testing. Biology text books and many books on honey bees, including some of the latest, state that honey bees communicate using a dance language. As I earlier noted, those *printed* words are difficult to contradict.

Finally, the idea in biology that behavior must be adaptive and of value to the animal supports the belief that the function of a bee dance is communication. Without an alternative function for a dance, people found it difficult to discard the idea that bees have a language. Honey bees should forage more efficiently than stingless bees, who have no "language," but in fact the latter are *more* efficient foragers. By the time this was conceded, the controversy was over and Wenner's odor-search theory had lost that round.

Veldink notes in closing that the survival of the language theory in the face of clear evidence against it has no real consequence — bees still make honey. The important lesson is how scientists responded and what are the implications for controversies that have life-or-death consequences. □



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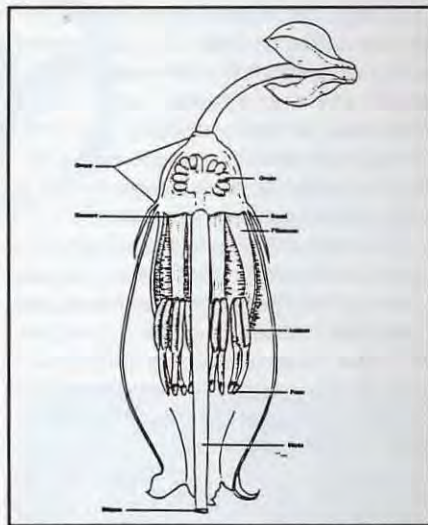
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*"Don't get second rate pay for first rate pollination."*

**T**wo publications, *The Wall Street Journal*, and *Audubon Magazine*, recently ran articles about pollinating Maine's blueberry crop. I'm sure you're aware of the *Journal*, and this particular article was published July 7th. *Audubon*, the official publication of the famous bird watchers society published in their July story. Both articles were written by reporters who knew nothing about pollination, beekeeping or blueberries. Yet they were both interesting, informative and, by and large, devoid of errors. There was a glaring exception in the *WSJ*'s story though, where the author, Sanford L. Jacobs writes, "It can be a honey of a business. PA beekeeper David Hackenburgh will receive revenue of \$60,000 this year for delivering his 1,500 hives to pollinate blueberries here in Maine and apples in PA. **And he gets to keep all that honey, in effect doubling his revenue** (emphasis mine). Nationwide, beekeepers received more than \$40 million for providing growers with one million hives last year."

I called Mrs. Hackenburgh, and asked if the *WSJ* account was true,

especially about the honey income. She said that this year, and a few other years, they actually did make a honey crop from blueberries. Usually, however, beekeepers don't make honey when pollinating a crop. This account of the Hackenburghs' seems unusual.



Longitudinal section of Tifblue rabbiteye blueberry.

And this is exactly the problem we have to overcome when dealing with non-beekeepers. You know, growers, the journalists and the backyard gardeners who think that your bees are growing fat and sassy collecting honey (nectar actually) from *their* flowers. And what's worse they are actually paying you for this!

Now you and I, and many growers know that to set their best crop, growers need bees, even more than they thought they needed just a few years ago. Thirty years ago, a beekeeper could produce a honey crop from alfalfa by putting 50 to 100 colonies near a 500 acre field. Now growers want two, three or more colo-

nies for each acre of seed. There are now so many bees in an area that they can't make a surplus crop.

I had a watermelon grower visit me in late July. He also grows canteloupe and pumpkins for a total of 145 acres under cultivation. He has 12 colonies of bees on his place. We talked a while and I told him that in order to grow large, sweet tasting melons, that were round and attractive and that consumers would buy, he had to have at least 450 seeds in the melon. Had he ever counted the seeds in a melon? No. Have you?

Each of these seeds represents a pollen grain transfer, and a single bee visit does not provide the needed 450 pollen grains needed for each flower. We know, as a result of much research that it takes from 10 to 20 bee visits in a small window of time to transfer the necessary amount of pollen to produce a saleable fruit.

This particular grower wanted the bees free, of course. He has been giving a year-round location to a local beekeeper who has 12 colonies there as rent for the location during the rest of the year. Right now, those 12 colonies

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could be rented for about \$12 each for pollinating various vine seed or sunflower crops. This grower is actually receiving \$144 from the beekeeper for the use of the apiary site year-round.

I told him, "beekeepers are in business to make a living, not for charity. You need three to four colonies per acre to adequately pollinate your fields and you will have to pay a beekeeper the going summer rate of \$12 per colony."

In a similar vein, I recently took a trip to the Big Island of Hawaii. There I visited with the two major commercial bee operations on the island, Kona Queen and the Hawaiian Queen Co. I was startled to learn that they too had fallen into the same trap. They were pollinating macadamia nuts for free so they could produce a honey crop. I told them I thought they were both making a great mistake.

In my opinion what should be done is for the beekeepers there, and several of the growers, to get together and run a pollination experiment. They already know the trees have to be cross pollinated, that is, flowers from one variety must receive pollen from another, compatible variety in order to set seed. Beekeepers on Hawaii should be renting their hives at about \$35 each, at three to five per acre. This would be profitable for both beekeeper and grower.

But back to blueberries. According to McGregor, in his book *Insect Pollination of Cultivated Crop Plants*, (If you don't have a copy of this book contact: Bee Lab, 509 W. Fourth St., Weslaco, TX 78596) beekeepers used to move bees to the Maine blueberries for the honey crop they could produce. What you may not realize is that the blueberries of Maine are not cultivated, but rather they grow wild. Because of this, for years no one investigated how to make them produce more berries. However, in the last 15-20 years this has all changed. The berry plants are now fertilized, sprayed to kill pests and generally 'managed'. They have also found that they need from three to five, or more, colonies per acre in order to set a good crop. □

*The Audubon article and the accompanying pictures make an excellent story. I can't send copies because of the copyright. Check with your local library. What you could do, of course, is to join the Audubon Society and request that issue. Membership Data Center, P.O. Box 2666, Boulder, CO 80322. Subscriptions \$20 year, single copies \$4, ask for Vol. 91, No. 4.*



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# RESEARCH REVIEW

DR. ROGER A. MORSE

Cornell University • Ithaca, NY 14853

*"Strawberry pollination requires honey bees for maximum fruit set, here's why."*

Two interesting papers have appeared recently on the pollination of strawberries, one on greenhouse pollination and the other on outdoor pollination. There are many strawberry varieties and their pollination requirements may vary one to another. According to McGregor (1976) the strawberry breeding program that has been in effect for many years has resulted in hermaphrodite flowers in all commercial cultivars. Commercial varieties of strawberries are also self fertile. When the stamens are mature and break open they scatter the pollen they contain, but this may not reach all of the many female parts. In studies in greenhouses, in still air, little fruit was set. However, if there was a fan to move the air and the pollen, the fruits were larger and better formed.

Another interesting fact about strawberries is that different flowers have different fruiting potentials depending on where they are located. The primary flower, sometimes called the king blossom, has about 350 stigmata (female parts) while the secondary flowers have about 260 each and the tertiary ones about 180. Each stigmata must receive a pollen grain if the fruit is to be perfect. Research conducted a number of years ago showed that the weight of the fruit is also related to how well the flower is pollinated.

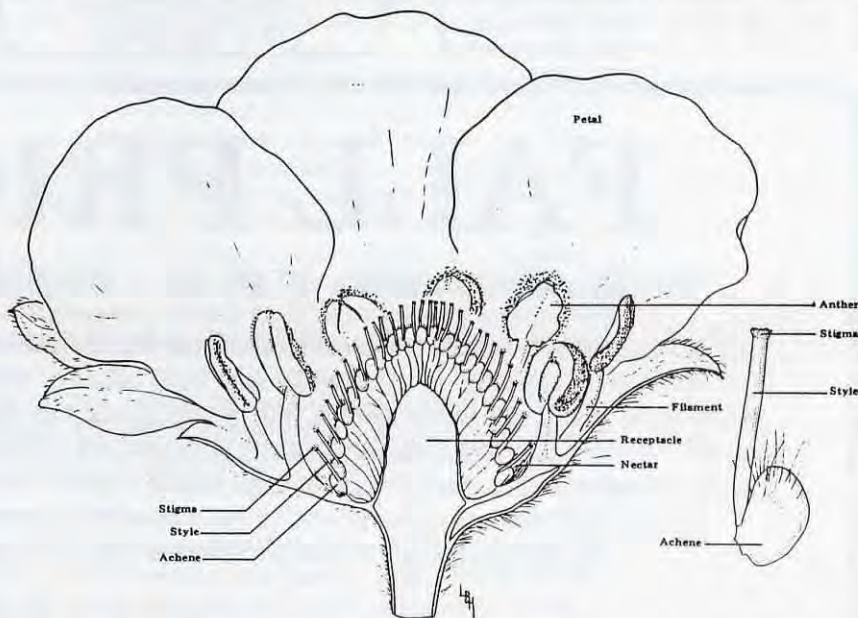
The first of two recent papers discusses greenhouse pollination of strawberries in Japan. In 1986, there were 64,000 colonies of honey bees rented for this purpose in that country. I saw firsthand this budding industry in about 1982 and at that time there were only about 25,000 colonies of honey bees being used in this manner. It is re-

ported that when the production of greenhouse strawberries was started in about 1968, the greatest problem was misshapen fruit, but research soon showed that introducing colonies of honey bees solved this problem.

The colonies that are used for strawberry pollination in Japan today are in five-frame Langstroth hives, though earlier I saw some that occupied

rented from the end of November until March or April. I've visited several greenhouses in Japan and can testify to the high quality of the fruit, which receives a premium price on the Tokyo market.

The second paper that appeared recently is concerned with outdoor pollination, in late May and early June in southern Quebec, in fields where the



*Longitudinal section of "Toga" strawberry with individual achene and style.*  
From McGregor

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In these studies the plants were



Strawberry flowers are attractive to honey bees; and honey bees are good for strawberries.

confined without bees until the observations were made and thus there was an accumulation of nectar in the flowers. The first visit to one of these flowers lasted nearly 25 seconds and subsequent visits were much shorter. We are aware from earlier studies on flowers of other species that a honey bee must land and spend at least three to four seconds probing a flower to determine if nectar is present or not; when present the bee stays longer than three to four seconds. Although the conditions under which the experiments in Quebec were conducted were somewhat artificial because of the caging of the plants, the data make clear that on strawberries either one very long or many short visits are necessary to make certain that pollen is transferred to all of the flowers' female parts. In contrast, in some plant species only one or a small number of seeds are formed by each flower,

and full pollination is achieved in only one or two brief bee visits.

It seems to me that the strawberry fields I have seen recently in the U.S. are larger in size than those I remember many years ago. If that is correct, and certainly larger fields of all crops are part of the trend in agriculture today, we can expect there will be an increasing demand for honey bees for strawberry pollination.

#### References

- Chagnon, M., J. Gingras and D. de Oliveira *Effect of honey bee visits on the pollination rate of strawberries*. Journal of Economic Entomology 82: 1351-1353. 1989.
- Matsuka, M. and T. Sakai *Bee pollination in Japan with special reference to strawberry production in greenhouses*. Bee World 70: 55-61. 1989.
- McGregor, S. E. *Insect pollination of cultivated crop plants*. Agricultural Research Service USDA Handbook No. 496. 411 pages. 1976.

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# Panama's Perils

**T**

he Africanized bee has had a devastating impact on beekeeping in Panama. A once thriving industry, that included export of honey to Europe, now does not produce enough honey to meet domestic demand. Even six years after introduction, problems are still evident but there has been adjustment. A few surviving beekeepers will become the future of the industry in Panama.

The Africanized bee first arrived in Panama in early 1982. Panama, connecting South America to Costa Rica and the rest of Central America, is a country of 2 million inhabitants about the size of South Carolina. People live primarily along the Pacific coast in a tropical climate. There are still large tropical forests, yet there is some high elevation agriculture, where potatoes, coffee, vegetables and dairy cattle thrive. With the Panama canal, the country is important in world commerce and banking. Beekeeping, and agriculture in general, are not extensively developed. In the 70's and 80's when low cost international development loans were readily available, beekeeping and agriculture expanded more rapidly.

Within two years of arrival of the Africanized bees, the 20,000 bee colonies of Panama were completely Africanized. In the subsequent 4 years the number of bee colonies has dropped by over 50 percent. Beekeepers have abandoned apiaries and reduced their managed colonies because of a high swarming tendency, a high level of absconding, and very aggressive hive defense. Neglect in apiaries and abandoned hives are now a common sight in both hobbyist and commercial operations.

Honey production in Panama has plummeted. Official government statistics had reported a growing honey harvest of 10-20% increase/year in the 70's. Now Panama beekeepers harvest less than 1/4 of what they did in the last year of beekeeping with European-race bees — 1982. The decline is largely due to lack of management and decrease in colony numbers, although competition from wild colonies may play a role. Wild (or feral) colonies, as well as bee swarms, were largely nonexistent in Panama before the Africanized bee arrived. Now swarms can be found everywhere. These create problems for beekeepers with human and animal stings for which the beekeeper gets blamed as well as competing for nectar and pollen resources. Unlike here in the U.S., beekeepers in Panama do not capture the Africanized bee swarms nor attempt to remove wild colonies except by killing them because the effort usually is not successful. Captured swarms of Africanized bees readily abscond.

by  
DEWEY CARON

*Continued on Page 677*



Nowhere are the changes in beekeeping due to Africanization more evident than in the apiary itself. Virtually all apiary sites have had to be changed. Isolation is necessary since even beekeeper examination is a disturbance that can lead to a stinging accident. Nobody wants an apiary site near their home. Finding suitable sites is a real challenge for beekeepers and sites are continually lost after "accidents". Stinging accidents result in orders to move colonies or heavy vandalism damage to the colonies.

Within the apiary, colonies are now placed on individual hive stands separated from others. Hive stands, necessary in Panama because of constant termite damage, ant predation and tropical vegetation growth, are commonly used. The colonies are usually fenced against livestock because animals, as well as humans, have suffered from stinging accidents — many animals have died as a result of such incidents. Some beekeepers believe shade helps reduce swarming and in the shade at least the colonies are better camouflaged.

Beekeepers now use extra clothing when working bees. Sturdy veils and gloves are a must. Coveralls or jackets and heavy pants and boots are needed to reduce the number of stings. Lots of duct tape is used to seal entrances. Large volume smokers, including a gigantic smoker 3 times the size of a normal smoker, are also used. Still stings are a common occurrence and only beekeepers willing to suffer stings continue with the bees. One additional modification is that it is necessary to don the protective clothing before entering the apiary site. This is, of course, a great discomfort in the hot tropical climate of Panama but absolutely necessary.

The beekeepers of Panama are learning how to manage Africanized bees. Different techniques work better for some beekeepers than for others. One change is in the management to keep bees in a hive and productive. The Africanized bee has a tendency to abscond. It reduces brood production during times when food is scarce and then very quickly expands brood rearing when conditions are more favorable. This is rapidly followed by queen rearing activities. Therefore to keep colonies productive, the beekeeper must continue to monitor conditions in



Beekeeping is often a two person job now, and both must use lots of protective gear. The colony in the background shows that AHB does make honey.

the hive and manage accordingly.

Feeding sugar helps keep colonies from absconding during the rainy season. It is possible to feed dry sugar since temperature and moisture levels are high. The beekeepers of Panama can go to local sugar mills and purchase a partially refined sugar at about half price to feed to their colonies. Some make a syrup while others feed it dry. Although there is some flight possible during the day during the rainy season and some bloom year round, sugar feeding helps stabilize the colony. There

often is very little brood in colonies at this time.

The transition from small, quiet colony to a colony rearing replacement queens is very rapid. Beekeepers try to manage swarming as they do in temperate areas by cutting queen cells and providing sufficient room for brood nest expansion. But swarms are still common and since their capture usually is not worthwhile, they are left alone. Colonies may swarm repeatedly. Colonies that swarm least often produce some surplus.

*Beekeeping in Panama's tropics is significantly different than even the most southern parts of the U.S. Nevertheless, individual hive stands are required to reduce agitation between colonies but also to slow down ant predation and keep colonies off the ground.*





*Honey is often harvested a frame at a time because equipment is scarce. Beekeepers in the U.S. do not have this problem and providing equipment for expanding brood nests or honey storage is routine.*

The Africanized bee does produce honey for beekeepers to harvest. Supering is often done by adding individual frames to upper boxes rather than adding entire boxes because tropical beekeepers do not have a large surplus of drawn comb in storage. They have much heavier pressure from wax moth and other stored comb pests than we face here in the U.S. Frames are often removed to be extracted and then put back on colonies the same or next day for refilling. When there is a population buildup, colonies store the surplus nectar. Experienced beekeepers report yields of individual Africanized colonies as similar to those formerly expected from European-race bees. What they find so different is their ability to keep colonies together and productive to store the nectar when it becomes available.

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The beekeepers of Panama, now solely keeping Africanized bees, face some problems we don't which are common to the tropics. These include pressure from insects and other pests that live in the colony feeding on the bees and their rich food stores. Ant predation for example is a constant problem and beekeepers must continually battle termites. Plant growth is phenomenal in the humid tropics and they battle constantly to keep the apiary site accessible.

And, of course, they face aggressive bees. Even simple management like feeding sugar or chopping weeds becomes more of a task requiring heavy clothing and large smokers. The behavior must always consider the neighbors. Beekeepers constantly try to keep the bees from becoming disturbed because they can then lose the site or have to pay for animals their bees kill in an accident. The bees are unpredictable, overly aggressive at times, and beekeepers try to insure that visits to the apiary don't result in angry bees ready to defend their hive.

The Africanized bee is not drastically different than the bees we keep here in the U.S. They have some behaviors we might dislike and they are, in many cases, a more difficult bee to manage. Panama's beekeepers are learning to live with those differences and are selecting for those colonies that best suit their management and climate. The impact has been largely negative to the individuals and the industry in Panama. It will take some years to adjust to and improve the manageability and temperament of the bees. Right now, the beekeepers are looking to the future when beekeeping again can become profitable and enjoyable. □

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# THE 1990 FARM BILL

KIM FLOTTUM

For forty years the beekeeping industry in the United States has operated under the protective umbrella of the Federal government.

The support provided has varied in type and kind, amount and accessibility over the years, but it has always been available for those who have braved the paper work and bureaucracy to obtain it.

The support program, which first surfaced in 1950, was put in place to relieve the burden of surplus honey in the hands of beekeepers and packers shortly after World War II, when the demand for honey dropped. The program was initiated, and continues today, as a vehicle to induce beekeepers to stay in business so that adequate numbers of colonies are available to pollinate the nation's crops, ensuring a steady supply of food and fiber.

But the support program has helped more than beekeepers and the farmers who require their pollination services. By reducing short term seasonal price fluctuations, prices on the open market have been smoothed, and are somewhat predictable from a user's viewpoint. This has encouraged relatively long term planning strategies (as long as any commodity user can get) for large-amount honey buyers, and has given new buyers the ability to predict

sourcing and availability.

Of course the amount of support paid to beekeepers has changed since 1950, following inflation, production costs and other price indicators. Demand has seldom played a role in determining price, but has always been in the background.

The Price Support/National Price graph shows the relationship of what honey has been selling for on the open market, and the price the government has been paying since the inception of the program. The prices paid for honey by the government under the support program have exceeded those in the domestic and world markets since 1981, providing additional benefits to beekeepers. Packers and others soon saw that it was cheaper to import honey at prices below the support price and not purchase domestic honey.

During this same period, domestic producers saw it more profitable to let the government take ownership of the honey, rather than pay off the loan. And in fact 98% of the honey placed under loan was taken over by the CCC. The discrepancy was clear — and the government was suddenly in the honey business.

To get out from under this, in 1986 the buy-back provision came into being, enabling producers to essentially bor-

row 'high' and pay back 'low'. This made it profitable for producers to take their honey off government's hands and place it in the mainstream of commerce. When this occurred, only 23% of honey loans were forfeited. The reduced costs of storage and processing were immediately evident.

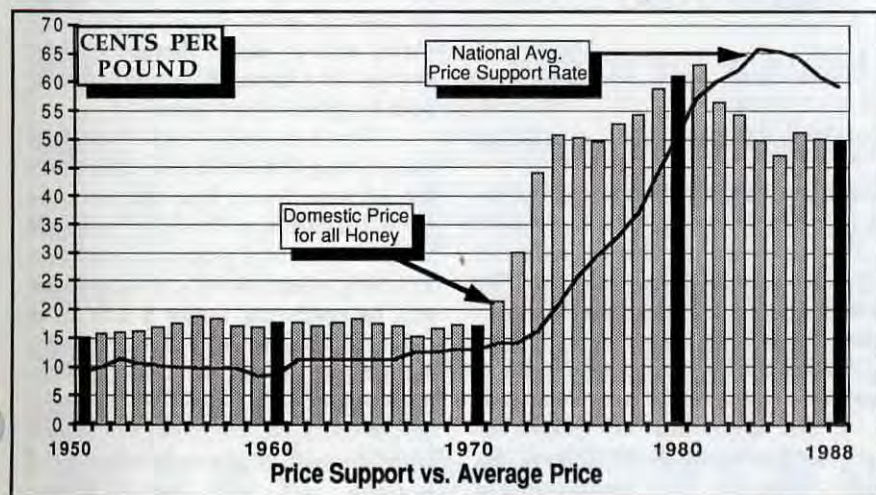
This latest farm bill, instituted in 1985 has had other changes that bear mentioning. A steady, downward rate of support was built into the program, which means that every year producers are paid less for their product. On top of this, congress instituted both a payment limitation and a loan forfeiture limitation, which, in the opinion of some has unduly saddled the industry with excess restrictions. It has been argued that no other commodity has this dual restriction, coupled with the built-in annual price reduction.

It is these questions, plus others, that will be investigated, and will ultimately shape the final outcome of the 1990 Farm Bill, now being studied in congress.

The USDA has been pleased with the way the 1985 Farm Bill worked. The total cost was within reason, and the honey industry was no exception. They are, however, under orders to investigate methods to reduce costs even further, and have instituted task forces to study each commodity.

For the honey program very few changes have been offered by these study groups because the current program is effective, and there is not a wholesale movement by the industry to have it changed. As a result, spokespersons for the USDA are predicting no major changes. But there will be at least one adjustment. And that, of course is the steady decline in the support price set to go into effect with the 1990 crop. This amounts to about a 5% drop from the previous year's price.

Certainly there are other players in this game besides the USDA. One team is the American Beekeeping Federation, who has an active lobby effort



in Washington. One of the activities of this lobby is to work for changes in the 1990 Farm Bill. The first of these is to stop the reduction in price, and if possible, have the price increased. Their claim is that inflation, production and other costs have increased, while the support price decreases annually. The gap is widening, and they don't like the predictable outcome. Their position is that the Loan Program needs to be fair and reasonable to all beekeepers, and to taxpayers, and should be abided to by all parties. They have no plans to ask for a change on the loan limitation or the forfeiture cap at this time.

Another player is the American Honey Producers, who also have an active lobby effort in place in Washington. They too want only minimal changes in the 1990 Farm Bill, but the fundamental difference is that they are seeking a reduction or elimination of the loan cap and forfeiture ceiling. Their contention is that no other commodity has this double whammy, plus the decreasing price schedule. It is, in their words, unfair, and unjustifiable.

They are also aware of the problems involved with the budget reconciliation act now in place, which may mean an *additional* 5% cut to the price. This would mean, in 1990, a total 10.3% cut in price below the 1989 crop price. In early November, the feeling in Congress was that perhaps the G-R cuts weren't as bad as earlier predicted. But social and Ag voices had yet to be heard. Generally, both the AHP and the ABF feel this additional cut would be unthinkable.

Both groups are on comfortable ground in Washington, since the honey industry has many friends in both congress and the USDA. These are friends made over many years of walking the halls and taking the time (and spending the money) to make contacts. Because of this, both groups are confident that there will be few changes in the 1990 bill. They are only looking for what they consider minor changes. The investment dollars, they say, are negligible, and the value will far exceed the costs.

So far this sounds like a pretty easy bill. Almost dull by political standards. For the most part all three parties are happy — the cost appeals to the Administration; the paper work appeals to the people in charge of running the program; and the industry who gains from the bill is mostly satisfied with the prices being considered. Are there no surprises in store? Well, maybe one or

two, and they both have to do with the environment.

## Environmental Impact

Actually, it is surprising that the concept of agriculture's effect on the environment took so long to get noticed. Farming's impact on the environment is, by anyone's standards, global. In the U.S. alone, by USDA's estimates, 400,000 acres of wetlands disappear annually due to farming; 5.4 billion tons of top soil erode away every year from private lands; nearly 375,000 tons of pesticides are spread on the land yearly, at a cost to farmers of \$5.9 billion, along with \$4.6 billion on fertilizer; and according to the ERS, over 1,400 counties in the U.S. have potentially contaminated drinking water.

All this is due, according to a report entitled 'A Shadow on the Land', published by the National Toxics Campaign and endorsed by Ralph Nader and several influential environmental groups, to the American farmers dependency on chemical inputs to remain profitable. To reverse this trend, farmers need higher subsidy prices to offset the reduced production when going

were severely curtailed because of efforts of the Natural Resources Defence Council and others.

And groups supporting family farms are beginning to be heard too. Their concerns are similar in that they fear that the chemical treadmill the government has them on has no off switch. With decreasing subsidies, they must produce more, which in turn puts more stress on the land. The short term gain is destroying the land, and thus the long term profitability of the soil, and their livelihood.

The ultimate losers in this are those who depend on farming for an income. They, like their (fairly) new environmental support group friends, will have a say in the 1990 farm bill.

There are other groups interested in dramatically increasing subsidy prices. The agrichemical industry, for one, has a stake in the profitability of both large agribusiness concerns, and small family farms. The goal of this group is to have the situation remain, at worst unchanged, or at best increased so dependency on (read sales) chemicals continues. There are also hard core farm support groups who want to see the standard of living for farmers keep pace with the rest of the country.

If they have their way, and prices are raised to cover losses of changing from chemical-dependant to land-protectant, the monies will have to come from somewhere. Long term, the reduced costs of environmental cleanup will pay the increased costs for farmers, but where will the money come from for the 1990 honey crop?

In all probability, these groups will have little impact on the honey industry's piece of the 1990 bill. However, the stage is being set for some major changes in 1995. It would be wise for the beekeeping industry to prepare now by seeking alternatives to price supports, and to align themselves with groups who have the same interests, both long and short term.

This is especially important when considering the additional costs due to the African Honey Bee, the continued spread of varroa and tracheal mites and the rising costs of labor and materials. By 1995, when this all starts again, we will be operating under a new set of rules. If the industry remains shortsighted and doesn't see these approaching changes, and doesn't begin to reorient its thinking, the result will be even lower support prices — or maybe none at all. □

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**Groups that  
support the family  
farm are  
beginning to be  
heard. And they  
have a lot to say.**

---

from high chemical to low (or no) chemical farming practices, says the report. But to accomplish these goals the N.T.C. contends there must be long term programs to reorient public agricultural research and to reform Federal regulations that encourage, rather than discourage, reliance on chemicals.

These environmental groups already have affected the 1985 farm bill, when sodbusting and swampbusting

# Farm Bill Facts

- **Beekeepers:** The USDA estimates there are about 211,600 beekeepers in the United States. The number of U.S. beehives is about 3,205,000.
- **Hobbyists/Part-Timers:** The majority (200,000) are hobbyists who keep less than 25 hives and supply friends, relatives and local outlets.
- **Commercial Beekeepers:** Numbering about 1,600, commercial beekeepers (with 300 or more colonies) produce about 60% of U.S. honey. Many migrate during the year to provide pollination services to farmers and to reach the most abundant sources of nectar.
- **Production:** Since 1975, U.S. honey production has averaged around 227 million pounds. The average annual honey yield per colony in 1988 was 66.4 pounds.
- **Leading Producers:** In 1988, Florida produced more than 25 million pounds at a value of more than \$12 million. California, Minnesota, South Dakota, Nebraska and North Dakota produced more than 10 million pounds each.
- **Product Forms:** Most popular in the United States is liquid honey, which is free of visible crystals. Comb, cut comb and creamed or granulated honey are also available.
- **Consumption:** The U.S. per capita consumption of honey hovers around 1.1 pounds per year.
- **Crop Value:** The 1988 honey crop was worth \$107.2 million.

Source: National Honey Board

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# BEE YARD BOO-BOO'S

Last spring my boss (that's him on the masthead, the one with the high forehead), told me I'd been spending too much time behind this desk and I should get out more. In fact, he told me to take a few weeks off and go out and get a couple of stories. Tough job, right?

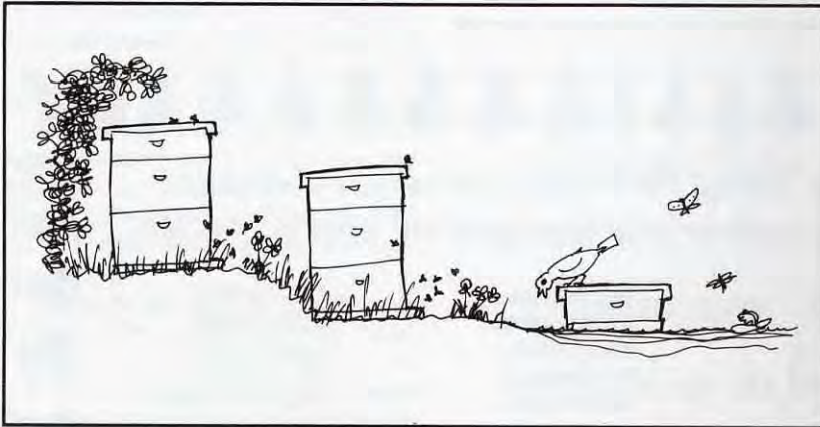
So on my first day off I started getting my colonies in shape. I cleaned some, joined a few that were weak, did some feeding — all the right stuff. Next day I started out and met my local Inspector in the driveway,

ready to check out my yard.

LIGHT BULB!!

I went along while he looked over my yard and while working we talked about my idea. He seemed willing to let me tag along for a couple of weeks, lending a hand when needed and looking and learning.

So, to keep my boss happy, I wrote down everything I saw, and most of what I learned. Of course, I haven't mentioned names or locations (you know who you are).



Probably the most frequent Bee Yard Boo Boo I saw was the lack of foresight when people placed colonies. If they moved them in the spring or summer, it seems little thought was given to what the area would be like in a month, or six. Nature seldom stands still.

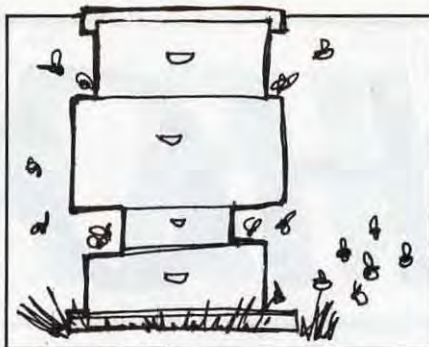
Creeks rise, roads get muddy, fields get plowed, fences go up, loggers come in — all sorts of unplanned events can, and will, happen. Choose your yard with an eye on the future, and keep your fingers crossed.

There's a lot to be said for convenience, but we saw a few too many sites that were way too close to all kinds of traffic for my comfort. Visibility invites vandalism, accidental people/bee interactions, and constant "observation" by any- and every- one. There's much to be said about "out-of-sight. . . "!

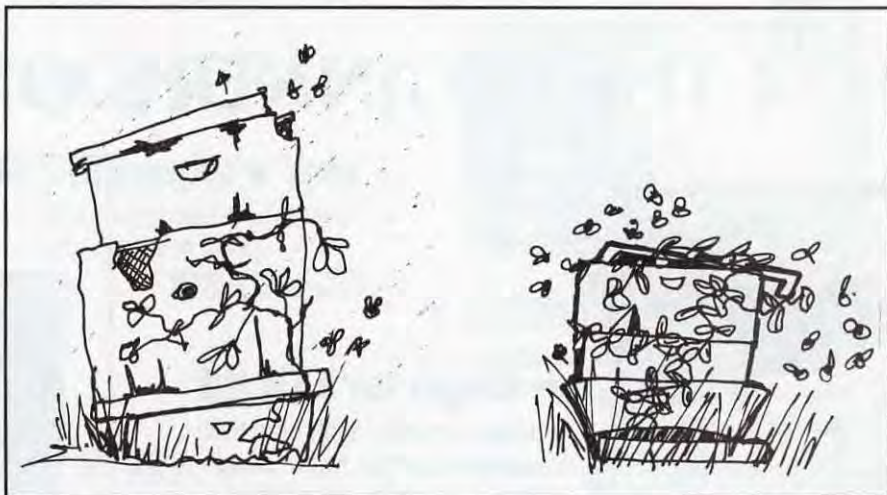




Of course, there's always the other extreme. Some beekeepers seem to find the most inaccessible, remote and nearly impossible-to-get-at locations imaginable. A two hour hike for us is one thing — but his feed bill for the pack mules must be staggering!



It never ceases to amaze me that people can't figure out that mixing equipment is only asking for trouble. Supers from here, frames from there, covers from someplace else. Bees are very unforgiving when you mess around with the laws of bee space. But then maybe these beekeepers like sticky supers, and slippery hands.



If I had a buck for every busted down box found I wouldn't have had to come back to work! There's sure a lot of scrap wood piled up out there. Cords and cords of it! But what's even more annoying, bees actually live in these disaster areas. I know some hadn't been checked in years and I swear some had been out there since A. I. started selling boxes!

Well, that's a quick rundown of some of the best (and worst) of the Bee Yard Boo Boo's I saw. I had an eye-opening time, and learned a lot about what works, what doesn't — and why. And, since I did all the

climbing and walking, lifting and moving, wading and cleaning — I don't care if the boss likes this or not. But I hope you did.

*Buzz Phillips*

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Combine shortening, vanilla and honey. Add eggs and beat until blended. Sift dry ingredients together and add to mixture, blending well. Stir in mincemeat. Drop by teaspoons onto greased cookie sheet. Bake in 350°F oven until light brown, 10 to 12 minutes. Makes about 60 cookies.

*A Honey of a Cookbook Vol. II*  
Alberta Beekeepers Association

Of course you are going to make your favorite fruit cake for the holidays. Try this variation to serve along with your favorite, just for a change. The honey will keep it moist for a long time. Wrap the cake in foil and store in a cool dry place. Or better yet, wrap in foil and send to a far-away friend.

### • Apricot Date Fruit Cake

1-1/3 cup dates, pitted and chopped  
1-1/3 cup dried apricots, chopped  
1 cup pecans, chopped coarsely  
1/3 cup walnuts, chopped coarsely  
4-1/2 cups whole wheat pastry flour  
1 tsp. baking powder  
1/2 tsp. salt  
3/4 cup butter  
1-1/3 cup honey  
5 eggs  
1 tsp. vanilla

Mix dry ingredients together, along with the nuts and dried fruits, so they are well-floured. In another bowl, cream the butter, honey, eggs and vanilla. Combine the two mixtures and mix well. Spoon the batter into two 4x8-1/2 inch bread pans that have been oiled and lined with wax paper or line with cooking parchment paper. Bake at 350°F for 1 hour. Makes 2 loaves.

*Honey and Spice*  
by Lorena Laforest Bass

A gift from a beekeeper can certainly be honey, but something made with honey is a truly special gift. This flavored vinegar is described as "colorful and perfect for salad dressings, poultry and meat marinades". Make some for yourself, too.

### • Festive Cranberry Vinegar

1 cup fresh or frozen cranberries  
2 6-inch bamboo skewers  
3-1/2 cups white vinegar OR white wine vinegar OR tarragon vinegar  
1/2 cup honey

Wash and pick over cranberries. Thread onto the 2 bamboo skewers. In a medium saucepan, heat cranberries and vinegar. Bring to a full rolling boil (cranberries should just begin to pop). Remove from heat and set cranberries aside. Stir in honey to blend. Pour hot vinegar into two sterilized pint jars or bottles. Add a skewer of cranberries to each. Seal. Makes 2 pints.

*Honey, Naturally*  
California Honey Advisory Board

With all the excitement about

## Media Quiz

The world of beekeeping can be as small, or as large, as you want. If you choose, you can ignore the attention, both good and bad, that bees and beekeeping have been getting, and will be getting more of, lately.

But if you choose to stick your head in the sand remember these words — "Right now, somebody, somewhere, is holding a meeting that will decide your future — and you weren't invited."

Sometimes these meetings are held behind closed doors and sometimes not, but the information used to decide your future will probably come, at least in part, from some media source — television, radio, newspaper or magazine.

The quiz below asks questions to find out how much you know of, and how well you understand, the news media. You can't hope to stop this machine, but the more you know the better prepared you will be if and when you must deal with it at some level (reader, listener, source, reporter, editor or publisher).

Answer the questions, then check the answers on page 697. Good luck!

1. How long each day does the average household watch TV? \_\_\_\_\_
2. How long each day does the average household listen to radio? \_\_\_\_\_
3. How long each day does the average person read a newspaper? \_\_\_\_\_
4. What percent of TV viewers watch network shows, as opposed to shows on "independent" stations, cable networks & non-network shows on network affiliates? \_\_\_\_\_
5. What percent of American homes have access to cable TV? \_\_\_\_\_
6. What percent of American homes have VCR's? \_\_\_\_\_
7. What percent of radio listeners listen to AM radio stations? \_\_\_\_\_
8. What is a "Ku Band" truck? \_\_\_\_\_
9. What are the top three circulation newspapers in the country? \_\_\_\_\_
10. What are the top three circulation magazines in the country? \_\_\_\_\_
11. How long was the average TV sound bite during the 1988 presidential campaign? \_\_\_\_\_
12. How many daily newspapers are there in the U.S.? \_\_\_\_\_
13. How many commercial TV stations are there? \_\_\_\_\_
14. How many radio stations are there? \_\_\_\_\_
15. In the next few years, there will be only two major radio networks. Who will own them? \_\_\_\_\_
16. In one line, what's the most important point to be made about the "Fairness Doctrine"? \_\_\_\_\_
17. What is the largest cable TV network? \_\_\_\_\_
18. Which day, Monday to Friday, are newspapers most heavily read? \_\_\_\_\_
19. What are the two top formats for TV PSA's? \_\_\_\_\_
20. What is good (or bad) public relations? How do you get it? \_\_\_\_\_

Christmas, the New Year celebrations sometimes get a bit ignored. This fruit dessert is easily made and is quite spectacular — an appropriate way to begin 1990.

### • Fruit Flambé

2 pears peeled and quartered  
2 peaches, peeled and sliced  
1 cup grapes or cherries, halved and pitted  
4 plums, cut in wedges  
1/2 cup water  
3/4 cup honey  
3/4 cup Cointreau or other orange liqueur  
2 Tbls. lemon juice

Combine fruit in a large bowl. Combine

water and honey and warm but do not boil. Remove from heat. Stir in 1/2 cup of the Cointreau and the lemon juice. Pour over fruit. Warm gently and ignite the remaining 1/4 cup Cointreau. Pour into warm fruit mixture. Makes 4 servings. Note: You can use other combinations of fruits in this mixture.

*Cointreau Secrets of Flaming Desserts*

Although purists will say that the new decade does not begin with the year 1990, but with 1991, it is really impossible to consider that 1990 belongs to the '80s. Let us welcome the "1990s" (I did not say "decade") and wish prosperity to our bees and the crops they pollinate. □

IS TOO MUCH ROOM AS BAD AS NOT ENOUGH?

# SINGLE SUPER BROOD CHAMBER

LEWIS J. DABB

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“With supers stacked eight feet high,  
I figured they must be doing  
something right!”

---

As a novice beekeeper about ten years ago, I found myself facing the age old problem of too many swarms. For two years I spent my summers chasing bees around the neighborhood. Each time they swarmed they would go farther from home until I was having to get them out of the tops of the neighbor's trees. At first this was a welcome event because I wanted to increase the number of hives I had from one to five. By the end of my first summer I had my five hives but no honey. The second summer I went through a stack of newspaper combining the swarms back into the hives they had come from after cutting out the swarm cells. I was also finding that most of the brood and the swarm cells were in the second box. Quite often the bottom box would be nearly empty. Even with two empty boxes above the brood chamber a couple of the hives still kept trying to swarm. It was getting so that it wasn't fun anymore. All of the books I had read, and there were many, insisted that a two box brood chamber was necessary. I even tried giving them three but it didn't seem to help. Finally in my search for the answer I read, *Mastering the Art of Beekeeping*, by Ormond & Harry Aebi.

One statement they made I found particularly interesting. "Double depth brood chambers have a tendency to cause bees to swarm no matter how many supers or how much room the bees have above the queen excluder."

This statement sounded exactly like the problem I had been fighting for the last two years. I read on enthusiastically.



*This is the set up as described. A single super brood chamber is on the bottom with a queen excluder on top of that. Above the excluder are the honey supers. Because of the reduced crowding in the brood super, swarming is greatly reduced.*  
(Koover photo)

"Few queens, not even our world winning queen," the Aebis continued, "need that much space for egg laying. The result is that the queen lays eggs in the cells that she can cover and the bees fill the balance of the cells with honey and pollen, usually in the upper one-third of the double depth brood chamber. And they often fill this upper one-third of the brood chamber to its utmost capacity, thus greatly restricting the circulation of air to the higher supers

and also making it difficult for the worker bees and hive bees to pass up and down between the fully drawn and sealed combs below the queen excluder. This honey barrier results in overcrowding in the brood chamber as the season advances with the result that the bees begin to build swarm cells."

This sounded perfectly logical but because it contradicted so many other books I had read, I still had



But even the best theories do not eliminate the need for a good check-up once in awhile. Looking for problems other than swarming is always important.

doubts. Yet on the back cover of their book *Mastering The Art Of Beekeeping*, was a picture of the Aebis standing beside one of their hives. The Supers

were stacked nearly eight feet high. If they could produce a hive like this with a single brood chamber then there had to be something to it. To further convince myself I decided to see just how many cells there were in the average brood chamber and see if it was enough to allow the queen to lay the number of eggs needed. First I counted the cells on the width of a frame — approximately 77. There are approximately 32 cells in the height of the frame;  $32 \times 77 = 2,464$  cells per side;  $2 \times 2,464 = 4,928$  cells per frame  $\times 10$  frames = 49,280 cells in a single super brood box. If the queen averages 1,800 eggs per day, which is what most of the books I've read tell you, then  $49,280$  divided by  $1,800 = 27.3$  days for the queen to use up all of the cells in the chamber. The complete time for the worker to hatch is 21 days, so there is a 6 day period when the cell can be cleaned and repaired for the next egg. Even the drone cells would have over 3 days to be cleaned. Because the cells are not square, but are hexagon shaped, the rows overlap so they are actually closer together than indicated by this count. There are quite a few more cells than the number indicated by the calculations. This was the

clinch. The theory was mathematically sound. On my third year of beekeeping I put my queen excluders above the first box as soon as the queen started laying brood. I was very careful to add my empty boxes on top of the excluder as the book had indicated. To my surprise, I didn't have a single swarm from any of the five hives that summer.

To quote from the book, "With the queen confined to only one full depth brood box the bees make maximum use of that space for the queen's egg laying and store practically all of their pollen and honey in the super just above the queen excluder."

As the Aebis indicate, the secret to this method is to make sure that the box above the excluder has plenty of room. In areas where there is a longer honey flow, they do suggest the need to occasionally add a shallow super to the brood chamber during the maximum brood raising season.

I have kept from 3 to 6 hives for the past eight years and have never had a swarm. Furthermore, these hives have produced extremely well for me, considering the tough winters that we have here in northern Utah. □



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# Hybrid Honey

CARSTEN AHRENS

**I** grew up just after the turn of the century on a 250 acre farm that was singularly elongated — much over a mile, yet in one area only a lane wide. There were 31 families whose land holdings bordered on us. Imagine 31 line fences to maintain and argue over! But it was a wondrous situation for our bees. Each year, from the last spring frost to the first one in fall, our bees had flowers galore in the surrounding fields and gardens to pollinate and to harvest the nectar for the delicious but undoubtedly very "hybrid" honey they produced. Oddly, no neighbor objected or even observed when our bees took no notice to NO TRESPASSING signs.

There was always canned honey or honey in crocks in our home, for if father had a hobby, bees were it. A huge crock always stood on the cellar floor, and many a long, winter evening was made short, fragrant and sweet by our gouging honey from this big, earthen container, boiling it in a heavy iron skillet, and "pulling" it until it became ivory-colored ropes that we cut into delicious mouth-sized portions.

Had I been reared in many parts of the world, stay-at-home bee hives and their occupants wouldn't have been possible. Huge fields of a single crop: potatoes, wheat, even apples — if the orchards are dutifully mowed, won't create summer-long business for bees. So for hundreds of years, as long as there have been rafts or wheels, beekeepers have been taking their bees to the flowers.

## ...travel by night, work by day...

John Hunter, an English entomologist, observed, "In the management of bees, much depends on supplying them with an abundant pasture. A rich corn country is well known to be to them as a barren desert most of the year. . . ." Hunter introduces Celsus, a Latin writer of the 1st century A.D. and author of "DE Medicina", who wrote. "...after the vernal pastures were consumed, the bees were transported to places abounding with autumnal flowers..." From ancient times in Greece, bees were taken from Achaia to Attica, and from Euboea and the islands of the Cycladea to Scyrus. In Sicily, also, they were transported from other parts of the island to Hybla, at the eastern end. Hybla, the middle one of three cities, all with the same name, was famous for its bees and its nectar-producing flowers. Shakespeare mentions the Hybla bees in his play, "Julius Caesar."

Pliny the Elder (23-79 A.D.) observed, "As soon as the spring food for bees has failed in the valleys near our town, the hives of bees are put into boats and carried up against the

current in the night, in search of better pastures. The bees go out in the morning in quest of provisions, and return regularly to their hives in the boats with the stores they have collected. This method is continued till the sinking of the boats to a certain depth in the water shows that the hives are sufficiently full, and they are then carried back to their former homes where the honey is taken out of them." Hunter mentions "This is still the practice of the Italians who live on the banks of the Po River as it was in Pliny's time."

M. Maillet, a long-ago Egyptologist, wrote, "One of the most admirable of the ancient Egyptians' contrivances, is sending their bees annually into distant countries, in order to procure substance, at a time when they could not find any at home, and afterward bringing them back — like shepherds who travel with their flock and make them feed as they go. It

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## Men have been moving bees as long as they have been keeping bees.

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was observed in Lower Egypt that all plants blossomed and the fruits of the earth ripened, about six weeks earlier in Upper Egypt than with them. . . . So about the end of October, all the inhabitants of Lower Egypt as have hives of bees, embark them on the Nile and convey them up the river to Upper Egypt, observing to time the voyage so that they arrive there when the flowers are budding. The hives thus sent are marked and numbered by their respective owners and placed pyramidally in boats prepared for this purpose. After they have remained some days at their furthest station, and are supposed to have gathered all the wax and honey they could find in the fields within two or three leagues around, their conductors conveyed them in the same boats two or three leagues further down, and there leave the laborious insects so long time as is necessary for them to collect all the riches of this spot. Then the nearer they come to the place of their most permanent abode, they find the productions of the earth, and the plants which afforded them food, forward in proportion. In time, about the beginning of February, after traveling through the full length of Egypt, gathering all the rich produce of the delightful banks of the Nile, they arrive at the mouth of the river, toward the ocean, from which they originally set out."

Hunter also notes that in many parts of France floating beehouses are common; there are on board one barge three to five score of bee hives well defended from the weather. The owners allow their barges to float gently down the river, the bees continually choosing their flowery pastures. He credited

the wide spread of beekeeping in czarist Russia to the use of peasants using honey over expensive sugar and to the wax tapers that were required in countless numbers by churches.

### ...brimstoning the bees...

Hunter writes that at the time of his article (c. 1890), "On the continents of Europe and America, beekeeping was carried on in a much larger and more scientific manner than in the United Kingdom, where the cottagers still used the ancient straw skep for a hive, and knew no other method of depriving the colonies of their stores than the barbarous practice of smothering the bees with brimstone."

A. J. King described "brimstoning", in fashion before the honey extractor was invented by a German, Von Hruschka, who was living at the time in Italy, as follows: "The common way of extracting honey was to brimstone the bees. Then taking the comb, honey, bee-bread and all, to press and strain the conglomeration. This antique method gave a mixture that was often very impalatable and unclean, and sometimes quite unfit for market." □

#### References

*Bee*, 9th Edition (1898) The Encyclopedia Britannica.

*Beekeeping*, 9th Edition (1898) The Encyclopedia Britannica

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1 teaspoon melted butter, cooled	

Beat eggs until foamy, continue beating while adding honey in fine stream.  
Beat in vanilla, butter, salt, add pecans and pour into shell.  
Bake in 400° oven for 10 minutes, reduce to 300° and bake for 20 minutes,  
reduce to 250° for 10 minutes or until filling is firm.

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# Brighter Than Bright!

KIM FLOTTUM

Do you have piles and piles of brown and black beeswax, just sitting around because nobody wants chocolate colored candles?

Are you ashamed to bring your wax to a supply house because you're afraid the owner will laugh himself silly, and then make YOU pay to have him take it off your hands?

Well, Bunky, have I got news for you!

After years of searching and experimenting, of trial and error, of failure after failure — finally there's a light at the end of the tunnel. Bleaching beeswax is a reality for beekeepers everywhere!

The very thought of bleaching wax usually conjures up visions of expensive and complicated machinery. Or, conversely, the work and effort involved in the simple, and not-very-effective technique of sun bleaching outside. Obviously, large commercial operators who process tons and tons of wax annually, subject their wax to pressure filters and microstraining routines that can make almost any wax acceptable for candles, foundation or other uses. Sun bleaching is usually not as effective, and certainly not as efficient.

So, what's left? What can you do with those piles of brown and black wax — slowly aging under the work bench? What can be done to make them saleable, to increase the value, or at least lighten it enough to use yourself?

Well, Wayne Robinson, a wax man from Puyallup, Washington, ran an impressive and enlightening demonstration during a workshop held at the 1989 WAS Conference in San Francisco last August.

He brought several samples of beeswax that were in the dark, un-



Wayne Robinson explains the chemical reactions that take place during the bleaching process and the remaining treatments required to make your wax 'Brighter Than Bright'.

sweetened-chocolate color range, and discussed how they got that way.

The first, and most common method of darkening beeswax is to melt it in a kettle made of iron. The wax reacts with the iron, forming oxides (similar to rust) that darken the wax. The hotter the wax, and the longer it is exposed to the iron, the darker it gets. One sample he brought was nearly black — a 'demo' block to show just how bad wax can get.

Overheating is another way to darken the color. When wax is overheated, some of the impurities held in the wax matrix (honey crystals, pollen, propolis, dirt) react to the high heat and actually burn or caramelize and turn dark. Even relatively pure wax will darken somewhat if it is overheated. Heat is definitely a problem with wax.

What Wayne demonstrated was a

technique to reverse the darkening — from overheating, contact with iron, or even plain old wax — that you can do in your workshop or honey house.

This is how it works, and what you need is —

- A gallon of 30% or 50% solution of hydrogen peroxide. Most pharmacies won't have this in stock, but can order it. If not, contact NORAC Chemical Co., 405 S. Motor Ave., Azusa, CA 91702 (818-234-2908). They sell a gallon of 50% solution for about \$29.00.
- A known weight of wax. It is important to know the exact weight of the wax.
- A way to heat the wax to be treated. Wayne uses an aluminum beer keg, cut in half, to hold his wax. This is

*Continued on Page 695*



Once your dark and dirty wax is melted, keep enough heat on so it remains liquid, but not so much to cause it to boil.



When adding the bleaching agent, always wear gloves and protective eye gear. Avoid skin contact. Add the chemical slowly to avoid splashing and try not to breathe the fumes.

placed over a heat source. The wax is added, along with enough water to float the wax — usually one to four inches, depending on the size of your container.

- Another container to put the liquid bleached wax into.

To lighten and brighten your wax, fill the container about two-thirds full, including water, and slowly melt.

"Don't get it real hot", says Wayne, "but keep it liquid, and keep it that hot by keeping the heat on."

Once the wax is liquid, add the hydrogen peroxide. When working with the very reactive chemical there are several things to keep in mind.

- Never breathe the vapors.
- Always wear gloves.
- Keep container lid on tightly when not in use.
- Avoid splashing on exposed skin, or on clothes you don't want stained.

The amount of chemical to add varies with how dark the wax is, the type of container and a few other intangible factors. However, as a rule of thumb, use one fluid ounce of chemical for each pound of wax in the container. A good idea is to try a small amount of wax in a smaller container, before going to a large batch. This will give you a feel

for time, amount, etc.

A gallon of chemical holds 144 ounces, so will treat about that many pounds of wax. The time involved is variable, depending on heat source, amount of wax and amount of chemical added.

Once the peroxide has been added the wax will begin to bubble and fizz. This is a result of the chemical,  $H_2O_2$ , breaking down rapidly into  $H_2O$  (water) and 'O' (free oxygen). The oxygen is then able to react with the contaminants, causing them to come out of the wax matrix, and settling to the bottom of the container.

The more that comes out — the lighter the wax in the container will

(Below) The dark and dirty wax will become considerably lighter as the process continues.

Notice that the bubbles are caused by the bleaching agent, NOT extreme heat. In the background are two cakes of wax. The darker is the original, the light cake has been bleached using this technique.



become. The solution will continue to bubble and fizz until all of the peroxide has been used.

If, when the fizzing is done, your wax is not as light as you would like, add more peroxide, remembering to keep the heat high enough so the wax doesn't cool. When the wax is finished to your liking, strain it through any of your favorite filters, because the contaminants (now reduced to ash), will have settled out and need removing.

And there you have it, Bunky — the whitest and brightest wax to sell or use! □

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# BEE TALK

RICHARD TAYLOR

9374 Route 89, Trumansburg, NY 14886

*"Strong colonies — with them you'll do well. Without them you've got trouble."*

I feel that my basic principle of beekeeping was vindicated once again this year. It is the one I discovered about ten years ago and have since alluded to as the Taylor principle. Why not? It needs some sort of name, if I am going to talk about it, as I'm afraid I quite often do. And I never saw it described by anyone else. I think that, for various reasons, it is never going to win acceptance by producers of extracted honey, but I am certain of its validity for comb honey beekeepers like me, at least where winters are cold.

I had my biggest comb honey crop ever this year. Others in the northeast and Ohio did not do so well, from what I have read and heard. Blame was put on the unremitting rain early in the season. It inhibited build-up, so that when the main nectar flows began, the colonies lacked the strength to take advantage of them. Thus the most basic requirement of honey getting was compromised. That requirement is to have *strong colonies*. No matter how good the honey flows, you will not get much honey without strong colonies.

Well, the rain left me discouraged, too. A few of my colonies had died over winter, killed outright by tracheal mites. That was something completely new to me. But the symptoms were unambiguous: Hives still heavy with stores, but no bees, not even the clusters of dead bees one normally finds in winter-killed hives. The remaining hives, on the other hand, were the strongest I had ever seen in early spring. So I revived the dead hives by giving them combs of brood, bees and honey from the strong colonies, adding new queens, and I was quickly back in good shape.

Then began the rainy season. It lasted so long that I truly thought that, for the first time in my life, I would get little if any crop at all. Instead, I got what was for me a record crop.

How come? The answer is in that great principle I alluded to above. That principle requires that I leave on the hives *all* the honey gathered after the first of August. The entire fall flow was left. Hives went into winter heavy as lead, with *honey*, not sugar syrup, and they came into spring still heavy. They thus had enough stores not only to winter on, but to build up on. How bees build up in spring is a function not only of early nectar flow, but of how strong they are to begin with, *and* how much honey they already have. So when the rains came, and stayed, the bees did not just mark time or fall behind. Their build-up continued. Then when, weeks

later, dry weather returned, and the honey flow began, my bees were ready. The apiaries of other beekeepers were left to build up belatedly *on* the flow, before they could store surplus.

Beekeepers do not, I think, sufficiently realize that population growth in a bee colony is not just a function of how good the queen is, or other such obvious factors as temperature and so on. It depends on the overall state of the colony and on various external conditions, including nectar flow into the colony *and* the amount of honey already in the hive during any period of nectar shortage, as in early spring.

Mr. Charles Mraz discovered this long ago, quite by accident. The early onset of winter prevented him from harvesting the late honey from one of his apiaries, so it remained on the hives. When spring came he found that the colonies in that apiary were way ahead of all the others. The explanation was obvious.

Beekeepers think they can achieve the same result by harvesting the late honey and then feeding the bees sugar syrup both fall and spring. It is not the same. That does indeed stimulate brood rearing while it lasts, just as a nectar flow would, but it is no substitute for the other factor I mentioned, namely, abundant stores.

As the summer advanced and I harvested my beautiful and bountiful crop, I began to have some second thoughts about my great principle. August came, the weather was warm, and there stood my hives, without supers. Some of the colonies were so strong the bees hung outside in the evening in huge clusters. The golden-rods were beginning to appear. I could

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not help wondering whether perhaps a super should not go back onto the strongest colonies, at least. My doubts increased when I discovered a field of buckwheat starting to bloom nearby.

Of course there had been, as always, a few unfinished sections from my harvest. So I fitted out three more supers, using foundation for the center sections, and the unfinished sections to the sides, and I put these on the three strongest colonies in one of my yards. In case these filled with honey, I thought, then I would want to reconsider my great principle.

That little experiment confirmed my principle. The three supers got some late honey in them all right, but it was not good quality comb honey, and before they were filled up the weather had turned wet and cold and the season was clearly ending. Had I followed my impulse and tried to get a fall crop I would have ended up with a lot of unsaleable half-finished and badly finished sections.

So I believe in that principle. My harvest was in and being marketed by the first of August. Some of my friends were still getting their honey off in November. My hives are now again all heavy as lead. They will require no wrapping, because honey is itself the best protection against winter. Apart from the losses I can now expect from mites, my bees will not only survive the winter, they will come out strong. Losses from mites will be easily made up by splits. And, as I think with satisfaction on these comfortable predictions, I rejoice that my crop was not only harvested early, it was mostly sold by the time some of my beekeeper friends were still just getting around to their harvest. □

(Questions and comments are welcomed. Use Trumansburg address, above, and enclose a U.S. or Canadian stamped envelope for a prompt response.)

## Media Quiz Answers

- Seven hours, 10 minutes (where do they find the time?).
- Two hours, 54 minutes
- Only 38 minutes, but it goes to 62 minutes on Sunday.
- Only 32% watch network shows.
- 83% have access to cable and fully 50% already have cable hook-up.
- 66% of U.S. households have at least one VCR.
- 25% listen to AM radio stations, which are primarily talk and news shows. FM stations tend to have primarily music shows.
- A satellite feed truck. With one of these, a major TV news show can get a line feed from nearly anywhere in the world — immediately.
- 1) *Wall Street Journal*; 2) *USA Today & New York Daily News* (Tied). Believe it or not, the *Washington Post* is only #7.
- 1) *Modern Maturity*; 2) *Reader's Digest*; 3) *TV Guide* (see #1).
- Only nine seconds. Lesson — If your answer to a TV interview is longer than 8-10 seconds, it may get edited — and suddenly you've either been misquoted, or answers 'appear' out of context. Be careful, and be prepared.
- 1,700
- 900
- 8,807 (4,863 are AM and 3,944 are FM)
- Westwood I (they own Mutual and NBC); and ABC
- This was overturned by the FCC (It said you had to give equal time to opposing views).
- ESPN, followed by CNN and TBS; C-Span is #8.
- Thursday — the day most newspapers run food sections (grocery stores advertise). Does Honey fit in here?
- PSA — Public Service Announcement — the 'freebies' TV stations give to good causes. Most common format is either 3/4" and 1" in either 20 second or 30 second spots.
- The ability to generate a third party endorsement. The ability to have the public sympathetic to your point of view; to cooperate with you.

This quiz, and for the most part the answers, are part of the USDA's media training program, where administrators learn how to deal with print reporters, give speeches and handle live interviews. □

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# Beauty and the Bees

B. A. STRINGER

English Ivy is a remarkably durable evergreen vine which, being of such cast iron constitution, is often planted where nothing else will grow. It makes an excellent ground cover on steep banks or in dense shade of trees or structures. The woody stems root as they grow, binding soil and preventing erosion. Both nectar and pollen are produced by the flowers, and the vine is hardy to Zone 6, or around 0°F.

The original English Ivy is described as being "too vigorous", i.e. rampant, for most situations. Fortunately, varieties have been bred for better behavior. The vine climbs by aerial rootlets, quickly covering a stone or brick wall or engulfing a chainlink fence.

Mature plants of English Ivy develop flowering growth which blooms from October to December and is one of the latest floral sources available to bees. Dull yellow pollen is produced by the newly opened, greenish-yellow flowers. As the flower ages, secretion of the highly concentrated nectar increases and the flowers are covered with bees and other insects. The flowers' strong scent apparently does not affect ivy honey, which is said to be greenish with a pleasant flavor. Shiny black berries form after the bloom.

A curious feature of Ivy growth is the distinct difference between flowering and non-flowering branches. Vegetative growth is vining or trailing with large, leathery, lobed leaves. Its color has been described as "monotonous green". In contrast, the flowering and fruiting branches are stiff, erect and shrubby, with smaller unlobed leaves. The round clusters of greenish flowers open from bunches of pale buds. You'll notice when the inconspicuous flowers open, because there is a steady hum from visiting insects. A friend, Mr. Morris Smith of Chitwood, Oregon, was called to remove "a swarm" from an ivy-covered stump last year in November.

---

English Ivy  
has a  
cast-iron  
constitution  
and the bees  
love it!

---



Disbelieving his caller, Mr. Smith followed up the request and found that it was only bees feeding on the ivy flowers. However, he likened the noise to that of "a good-sized swarm of bees".

Ivy has been cultivated for centuries. Its botanical name *Hedera helix*, comes from the classic Latin name for ivy combined with the word for 'twining'. Ivy belongs to the Araliaceae, or Ginseng Family, which have in common woody solid stems and flat clusters of flowers.

English Ivy may be propagated from cuttings which root easily. Cuttings from vegetative growth produce low shrubby plants called arborescent ("tree-like") forms or "tree ivies".

Best times to transplant ivy are in fall or early spring. Make sure the soil and plants are well watered before and after planting, and are watered if necessary in summer. Established plants

are quite drought-tolerant and require little maintenance. Prune or mow back unruly vines in early spring, when new growth will quickly cover the surgery.

This very effective ground cover can also be a haven for slugs and snails, and sometimes rodents. Trap or bait for pests if they become a problem.

If the regular English Ivy is too rambunctious for your site, you may prefer one of the more sophisticated ivies. Small-leaved forms look good in hanging baskets or as limited area ground covers. Slightly less hardy are Algerian Ivy, which needs constant moisture, and the large leaved Persian Ivy. There are very attractive forms with marbled or variegated leaves which may be available at nurseries.

You can incorporate English Ivies into your own landscaping to benefit bees and beautify a rough spot in your yard. □

# QUESTIONS?

## Better late...

**Q.** I didn't get my honey off on time this year. Is it too late now (Nov. 28) to harvest it?

Don McNelly  
Irondequoit, NY

**A.** More than one beekeeper has found himself in the apiary taking supers of with snow on the ground. Often they will be found with no bees in them at all, which is nice. On the other hand, the honey is likely to be granulated. In that case, about all you can do is give it back to the bees come spring, putting the supers of granulated honey right on the bottom board, under the brood chamber, where the bees will clear them out.

## More Air

**Q.** I have recently read about an upper winter entrance. How do you get this?

Frank Davison  
Red Hook, NY

**A.** You don't really need an upper entrance, but you do need the ventilation that such an entrance provides. If you want an upper entrance you can bore a hole in the second story, or crack the two stories apart and put a pebble in the corner, creating a crack large enough for bees to go in and out. But if you just want the ventilation, which is essential for wintering, just leave the inner cover hole partly open, or separate the two stories and insert a small stick, making a narrow crack. Sometimes, when hives become old, they develop cracks and holes and the ventilation problem is solved.

## How Much?

**Q.** What is a proper rental fee for an apiary site?

Duane Waid  
Interlaken, NY

**A.** About two pounds of honey per hive, less for a landowner who uses little honey, and no fee at all for someone who benefits from the pollination. There are many factors to consider, such as whether the land could be used for something else, the size of the apiary, etc. But the foregoing is a good rule of thumb.

Questions are welcomed. Dr. Richard Taylor, 9374 Rt. 89, Trumansburg, NY 14886, enclose stamp and addressed envelope.

## Cappings Care

**Q.** Several people buy cappings from me and claim that eating these greatly relieves their hay fever allergies. Do I expose myself to any special risks of liability by selling cappings for this purpose?

Duane Waid  
Interlaken, NY

**A.** Back when I produced extracted honey I had customers, both in New England and in upstate New York, who bought cappings for this purpose, sometimes claiming that these completely solved their allergy problems. The frequency and consistency of these reports convinces me that they are, in some cases at least, well founded. As a beekeeper, however, you cannot make any written claim to this effect or advertise cappings as a cure for anything, as this would amount to placing cappings into a category of medicine. What you can do, however, in response to anyone who asks, is state truthfully what users of cappings have actually told you. As for any liability risks, it is important that care be taken, as with honey or any other food, that the product be free of any foreign matter, such as a sliver, tack, bit of wire, dead bees and so on, and the cappings should be represented only as a food, not in any sense a medicine. Take care, too, to pack only the nicest clean white cappings, and charge accordingly.

## Rare, Rare

**Q.** I started last spring with two hives and expanded to four by hiving early swarms. When we harvested the honey in August we found that much of it had granulated in all four hives and could not be extracted. What made it granulate?

Fred Hartke, Jr.  
Higganum, CT

**A.** The fact that it granulated in hives started this year indicates it was not last year's honey that granulated over the past winter. It is very unusual for honey to granulate so quickly, although in many years of beekeeping I did see this happen once. It will probably be a very long time before you see this happen again. I know of no way to salvage the granulated honey. Put the supers containing the honey at the bottom of your hives, under the brood nest next spring. The bees will clear them out.



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# ANSWERS!

Richard Taylor

# GLEANNINGS GLOBE

DECEMBER, 1989

ALL THE NEWS THAT FITS

## FEDERATION COVERS IT ALL AT VEGAS MEETING IN JANUARY

The 46th annual meeting of the American Beekeeping Federation opens Jan. 15 at the Riviera Hotel in Las Vegas.

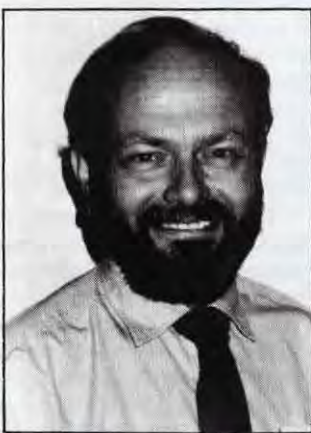
Activities include The Trade Show, The American Honey Show, The Honey Queen Reception, Quiz Bowl and crowning, The ABF Ladies Auxiliary meeting, The National Honey Packers and Dealers Association meeting.



Representative Charles Stenholm, TX, will deliver the Keynote Address. Stenholm, who is on the Ag Committee, will discuss critical elements of the farm bill and other Congressional activities.

Tours include Hoover Dam, Lake Mead and "Highlights of the City".

Two features new to the Las Vegas convention are an afternoon of workshops and an evening session to explore ethical dilemmas of beekeeping.



Dr. Tom Sanford will host the special evening session on Ethics in Beekeeping, new this year.



Dr. Tom Rinderer will speak on Breeding for Resistance.

The workshops are designed to provide a wider variety of information than the traditional large-audience lectures can accommodate. A dozen different topics will be offered in 40-minute sessions. Each person can attend three workshops.

"The Ethics of Beekeeping," patterned after the PBS-TV se-



Dr. Eric Erickson will address mites, and bee nutrition.



Mary Humann will discuss a variety of topics relating to marketing and the National Honey Board.

ries "Ethics in America," will explore the ethical questions faced in selling bees and honey. It will take place in a special session on Tuesday evening.

The general sessions cover all the expected topics: honey marketing, mites, African bees, federal programs and pesticides.

The convention proper will

conclude with the annual business meeting on Thursday afternoon and the banquet and coronation ball on Thursday evening. Meetings of the ABF Executive Committee and Board of Directors will be held before and after the general sessions.

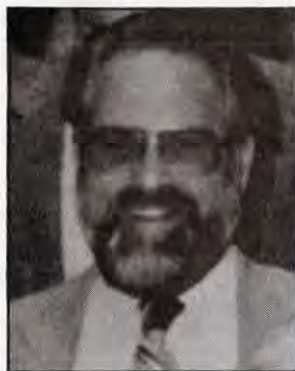
Convention travel arrangements can be made through Caravel Travel Management. In IL & Canada call (708) 860-8325. All others call 1-800-222-6664.

Persons needing additional information should contact the American Beekeeping Federation, P.O. Box 1038, Jesup, GA 31545, (912) 427-8447. Anyone interested in beekeeping is welcome to attend.

### AIA MEET IN WA IN JANUARY

The Pacific Northwest Honey Bee Conference will be held in Seattle, Washington, on 8-13 January 1990 as a combination of the annual meetings of the Apiary Inspectors of America (AIA) and the Washington State Beekeepers Association (WSBA), hosted by the Puget Sound Beekeepers Association (PSBKA), along with participation from the Oregon State Beekeepers Association (OSBA) and the British Columbia Honey Producers Association. This is the first time that the Apiary Inspectors of America have met in the Pacific Northwest according to President James C. Bach, Chief Api-

*Continued on Next Page*



James Bach, AIA President and WA State Inspector hosts this years meeting.



Dr. Mike Burgett, from the Univ. of Oregon, will also speak at the meeting.

## AIA Continued...

ary Inspector for the WA State Dept. of Agriculture," so we decided to combine our national meeting with a regional beekeepers meeting to provide an opportunity for cross-fertilization of regulatory, research, and management needs and ideas."

State chief apiary inspectors can meet with leading national researchers and program managers, such as USDA's Dr. Bill Wilson and APHIS's Milt Holmes as well as with regional multi-state migratory beekeepers to discuss mutual problems and possible solutions to such pressing topics as slowing the spread of tracheal and Varroa mites and Africanized honey bees. Regional commercial and non-commercial beekeepers will be able to talk with these experts and various chief state regulators will describe their perspective for the industry's future.

A wine and cheese reception will be sponsored by the WSBA and OSBA Thursday evening and the formal joint state meeting will convene on Friday and Saturday morning where national and regional speakers will describe their perspectives for the honey bee industry. These speak-

ers include Doug McRoy, Ont; L. Cutts, FL; Judy Carlson, ND; Pat Paswater, CA; Paul Jackson, TX; Frank Eischen, WA; Eric Mussen, CA; M. Burgett, OR; and Dan Meyer, WA.

Preregistration before December 15, for the WSBA/OSBA portion is \$39 (\$44 after December 15) and will include the annual syllabus, wine and cheese reception, and refreshments at the breaks. Persons wishing to register for only the AIA portion would pay \$60 or an additional \$25 if registering for both the WSBA/OSBA and AIA programs. A honey show will be sponsored by the Washington State Master Beekeepers Certification Committee, who will also have a Saturday program. A limited number of commercial tables are available (PSBKA Secretary Wayne Schneider, 22849-132nd SE; Kent, WA 98402 (206) 631-5956.

Registration materials, hotel reservation kits, and additional information are available from: Pacific Northwest Honey Bee Conference; P.O. Box 714, Seattle, WA 98111-0714 or from WSBA Vice President Robert Zahler (206) 778-4387.

## MORE FAX FACTS

In a pilot program, the U.S. Postal Service is planning to install public fax machines at post offices in 260 different cities. In addition to sending transmissions right away, these fax machines will have the capabilities

to store transmissions until the intended receiver punches in an identifying code to retrieve it. If the program is successful, fax machines will be installed in about one-third of U.S. postal locations.

## 5 Winners

# HONEY PRODUCERS DEVELOP LOGO



Larry Connor, Ray Chancey, Richard Adde, Glenn Gibson, Jerry Cole and Jerry Stroope.

The executive committee of the American Honey Producers Association is proud to announce that their year long search for a logo has been successful! "The final decision was unanimous at our last executive com. meeting in Washington D.C.," says Ray Chancey, AHPA Sec/Treas.

AHPA President, Richard Ade, stated that, "What we wanted when we started this was a logo that would show our strength and our unity, and that we are a strongly motivated organization moving in behalf of this country's beekeepers. In addition, we wanted the ideas for the logo to come from our mem-

bers. With the logo that was finally chosen, I think that we have all of that."

"Originally, we had thought that we would have just one winner of the logo contest. But we ended up with five winners!" Ray continued. "Since the logo that was chosen was really a combination of all of the ideas that were submitted to The Hill Group, the executive committee made the decision to present awards to all of the five individuals that were the finalists. They will be notified what their prizes are, and they will be awarded to them in Tucson at our annual meeting in January of 1990."

## Recycle: Don't Just Trash It!

**LOOKING FOR RECYCLED PAPER? TRY THESE:** The Recycled Paper Co., Inc., 185 Corey Road, Boston, MA 02146, 617-277-9901, (FAX) 617-738-4877. **AND:** Cross Pointe Paper Corp., Recycled-Acid Free Printing Papers; Sales Office at 1185 Ave. of the Americas 30th Fl., New York, NY 10036, 212-575-4665 or Butterfield Office Plaza, 2625 Butterfield Rd., Oak Brook, IL 60521, 312-572-0429.

**HOUSEHOLD GARBAGE PRODUCTION/PERSON/DAY:** Kano, Nigeria 1.01 lbs; Calcutta, India 1.12 lbs; Rome, Italy 1.52 lbs; Tokyo, Japan 3.04 lbs; NYC, USA 3.96 lbs.

Some of this includes: Scrap tires generated by American drivers in 1988 — 246.9 million. Razors and blades thrown away by Americans each year — 2 billion. Pens thrown away — 1.6 billion.

## Noses, Toilets and ZipCodes

# GET READY FOR THE COUNT, AGAIN

- As it does every 10 years under Constitutional mandate, the Commerce Department's Bureau of the Census will begin counting American citizens next April for purposes of Congressional districting and possible reapportionment.
- The 1990 count will be "do-it-yourself", taken largely by mail.
- Every household will receive a census questionnaire shortly before Census Day—April 1. One member of the household will serve as census-taker.
- The short form, which goes to five of six households, will ask for age, race, sex, marital status and household relationship, along with questions about the housing unit.
- Seventeen percent of all households will get the long form. It contains the same questions as the short form plus additional ones about demographic and socioeconomic characteristics of each household member—such as income, ancestry, occupation, education, travel to work and housing costs.
- Response to the census is required by law (Title 13, United States Code). The same law protects the confidentiality of the information supplied.
- To manage the operation, the Census Bureau will use several million square feet of office space in 484 temporary district offices, supervised by 12 permanent regional offices and 13 temporary centers. Seven temporary centers will handle the processing and summarization of data from the census forms. About 480,000 temporary employees will be hired.
- Preliminary count data will become available in waves, beginning early in 1991. Final data and special reports are targeted for early 1992 and can be ordered as printed reports, summary computer tapes and diskettes, microfiche, maps and charts and perhaps compact data disks.

## Sugar Still Uncertain, but...

# CORN USE UP

NON-FEED USE OF CORN has increased from 500,000 to 1.3 million bushels since 1975. Allan Lines, agricultural economist at Ohio State University, says corn sweetener and alcohol production split equally about 90 percent of the increase. Whether such growth continues, however, depends on government policies. Fuel alcohol should increase slightly as some cities mandate cleaner-burning fuels to reduce smog levels. But the corn sweetener market is hostage to the U.S. government's sugar program. Should policy-makers decide to allow more sugar to be imported and/or drop the domestic price of

sugar closer to world prices, the U.S. corn sweetener market could be in trouble. That would translate to trouble in the corn market, Lines says.

## Wise Words

"There is nothing that a man cannot make a little worse and sell a little cheaper, and anyone who looks at price alone is his lawful prey!"

John Ruskin, 19th century industrialist and philosopher

## HONEY BOARD HIGHLIGHTS

### CRISIS PREVENTION

Shortly after its formation, the National Honey Board began to consider possible situations which might adversely affect the beekeeping/honey industry. These discussions were accelerated by recent events that have attracted media attention, such as the Alar scare and the Exxon mishap.

The Scout's motto "be prepared" is the logical approach to handling any potential crises—develop a plan, involve and enlist the support of other industry organizations, select a spokesperson for each potential problem, gather information and prepare statements to answer possible questions.

In the event of a crisis, serious damage to the industry could occur if numerous people who are not aware of all of the facts attempt to answer media questions. Responding to the media requires proper thought and preparation in order to avoid confusion.

The National Honey Board has taken the lead in developing and organizing a plan and in selecting and training spokespersons for potential problems, such as infant botulism, Africanized bees and food safety.

The National Honey Board recommends that questions or problems concerning the Africanized bee be directed to Jim Tew, National Apiculture Extension Agent at (216) 264-3911. Problems or questions concerning the wholesomeness of honey should be directed to the National Honey Board, who will then contact the spokesperson in the particular problem area for a response.

### WHAT'S BUZZIN'?

"What's Buzzin'," the National Honey Board's new educational videotape is now available.

The 10-minute videotape for school children, grades 4-6, features child reporters who set out to learn about honey bees for their newscast—"What's Buzzin'." The children interview Dr. Jim Tew and beekeeper Dwight Stoller.

The video explains pollination, the roles of bees in the hive and what bees do best—make honey.

The video and fun educational handouts are available for \$15. For your copy, send a check to National Honey Board Educational Video, 421 21st Ave., Suite 203, Longmont, CO 80501-1421, Attn: Barbara Smith.

Let your local schools know what's buzzin'!

### CHEX CHECKS OUT HONEY

Honey Graham Chex Cereal, with support from the National Honey Board, has been reformulated to double the amount of honey. To bring the consumer's attention to honey, the cereal's packaging, sales materials and coupons will feature the Honey Board's lovable honey bear mark.

"Honey is a hot item," said a spokesperson for Ralston Purina Co., manufacturer of Honey Graham Chex cereal. "Honey is more popular with the consumer because it is a natural, wholesome ingredient, has great taste, and substantially adds to product value. Sales in the honey-added segment of the ready-to-eat cereal category have increased more than 93 percent in the past year to over \$480 million in annual sales. With that kind of consumer response, we felt the National Honey Board logo helped enhance the success of Honey Graham Chex."

"The Honey Board's honey bear logo is reserved for products using honey as a substantial sweetener. Honey Graham Chex was reformulated to double its use of honey and therefore qualified for the use of our logo," said Mary Humann, public relations director for the National Honey Board.

## We Actually Breathe This Stuff?

# MILLIONS OF POUNDS OF TOXINS EMITTED

1. Texas .....	239.0	27. Oklahoma .....	36.4
2. Ohio .....	172.7	28. West Virginia .....	35.6
3. Louisiana .....	138.3	29. Alaska .....	31.7
4. Tennessee .....	135.0	30. Massachusetts .....	30.1
5. Virginia .....	132.4	31. Connecticut .....	26.1
6. Michigan .....	116.4	32. Kansas .....	24.7
7. Indiana .....	112.9	33. Oregon .....	20.9
8. Illinois .....	99.2	34. Maryland .....	20.2
9. Alabama .....	98.3	35. Arizona .....	16.6
10. North Carolina .....	94.6	36. Maine .....	14.6
11. Georgia .....	93.6	37. Nebraska .....	14.4
12. New York .....	89.4	38. New Hampshire .....	13.0
13. Pennsylvania .....	87.5	39. Colorado .....	11.0
14. California .....	82.7	40. Delaware .....	8.0
15. Utah .....	77.3	41. Rhode Island .....	5.9
16. South Carolina .....	64.2	42. Montana .....	5.3
17. Mississippi .....	57.3	43. Idaho .....	4.2
18. Arkansas .....	54.6	44. New Mexico .....	3.6
19. Kentucky .....	51.7	45. Wyoming .....	3.2
20. Missouri .....	50.6	46. South Dakota .....	2.4
21. Florida .....	50.2	47. Vermont .....	1.4
22. Wisconsin .....	48.7	48. Hawaii .....	1.1
23. Minnesota .....	42.1	49. North Dakota .....	0.9
24. New Jersey .....	42.0	50. Nevada .....	0.7
25. Washington .....	40.6		
26. Iowa .....	39.2		

Source EPA

Millions of Pounds of Toxins by State

## IRS NEWS

Confused on what type of records you're expected to keep for tax purposes? Then you may want to send for Publication 552, *Recordkeeping for Individuals and a List of Tax Publications*. The free booklet provides information on the types of records to keep, the lengths of time records should be kept, and the different methods of accounting that can be used.

Publication 552 also lists other tax publications available from the IRS. To order, call (800) 424-FORM, or contact the IRS Forms Distribution Center in your area.

## LOST?

The Internal Revenue Service loses two million returns and related documents each year.

A big part of the problem is that over 50% of the IRS file clerks and 36% of IRS managers have been in their jobs less than 1 year.

## More Toxins: Weed-Bee-Gone

The weeds that force their way through cracks in streets, sidewalks, and airport runways are more than just a nuisance. By splitting apart asphalt and concrete, they cause hundreds of millions of dollars worth of damage in the U.S. each year. But now, researchers have come up with a new solution: filling the cracks with plastic rope impregnated with herbicides.

Developed by Battelle Pacific Northwest Laboratories and RM Engineered Products in North Charleston, SC, the rope absorbs the herbicide and releases it slowly. Scientists hope the product, once put in place, will control weeds for up to 20 years. Researchers will conduct a large-scale test by inserting the rope into seams and cracks in the taxiways and runways of Chicago's O'Hare International Airport.

One more source of nectar and pollen gone.

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

### ★ INTERNATIONAL ★

**THE APIARY INSPECTORS OF AMERICA (AIA)** will meet at the Edgewater Inn in Seattle, Washington January 8-13, 1990. For more information contact Wayne Schneider, 22849 132nd SE, Kent, WA 98042.

**An Entomological Society of America Africanized Honey Bee Symposium** entitled "Africanized Honey Bee Action Programs" has been scheduled

for the Entomological Society of America meeting in San Antonio, Texas. The Symposium will be held on Sunday, Dec. 10 at 7:00 pm in Fiesta "C" room in the San Antonio Convention Center. Contact H. Shimanuki for further details at (301) 344-3975.

### ★ AM. BEEKEEPING FED. ★

**The American Beekeeping Federation** will hold it's Annual Convention at the Riviera Hotel in Las Vegas, Nevada

on January 14, 1990 through January 19, 1990.

### Tentative Program and Schedule Sunday, January 14, 1990

**AM** ABF Executive Committee meeting; National Honey Packers & Dealers Directors meeting; Trade Show Set-up

**PM** ABF Research and Technical Committee meeting

### Monday, January 15, 1990

**AM** ABF Board of Directors; National Honey Packers & Dealers Association - General Session. Open Meeting for Members and Guests of NHPDA

**PM** Opening Ceremonies - Keynote Address: The Honorable Charles W. Stenholm, U.S. House of Representatives; "The Joys of Beekeeping" - Gene Killian; "A Financial Review of a Commercial Operation" - E. Randall Johnson; "How Can We Raise Honey Prices?" E. Randall Johnson, Dan Hall, Don Schmidt, Bill Gamber and N. J. Sargeantson

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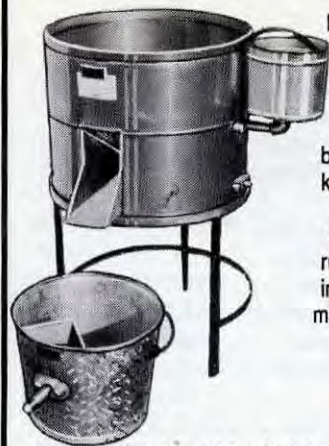
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