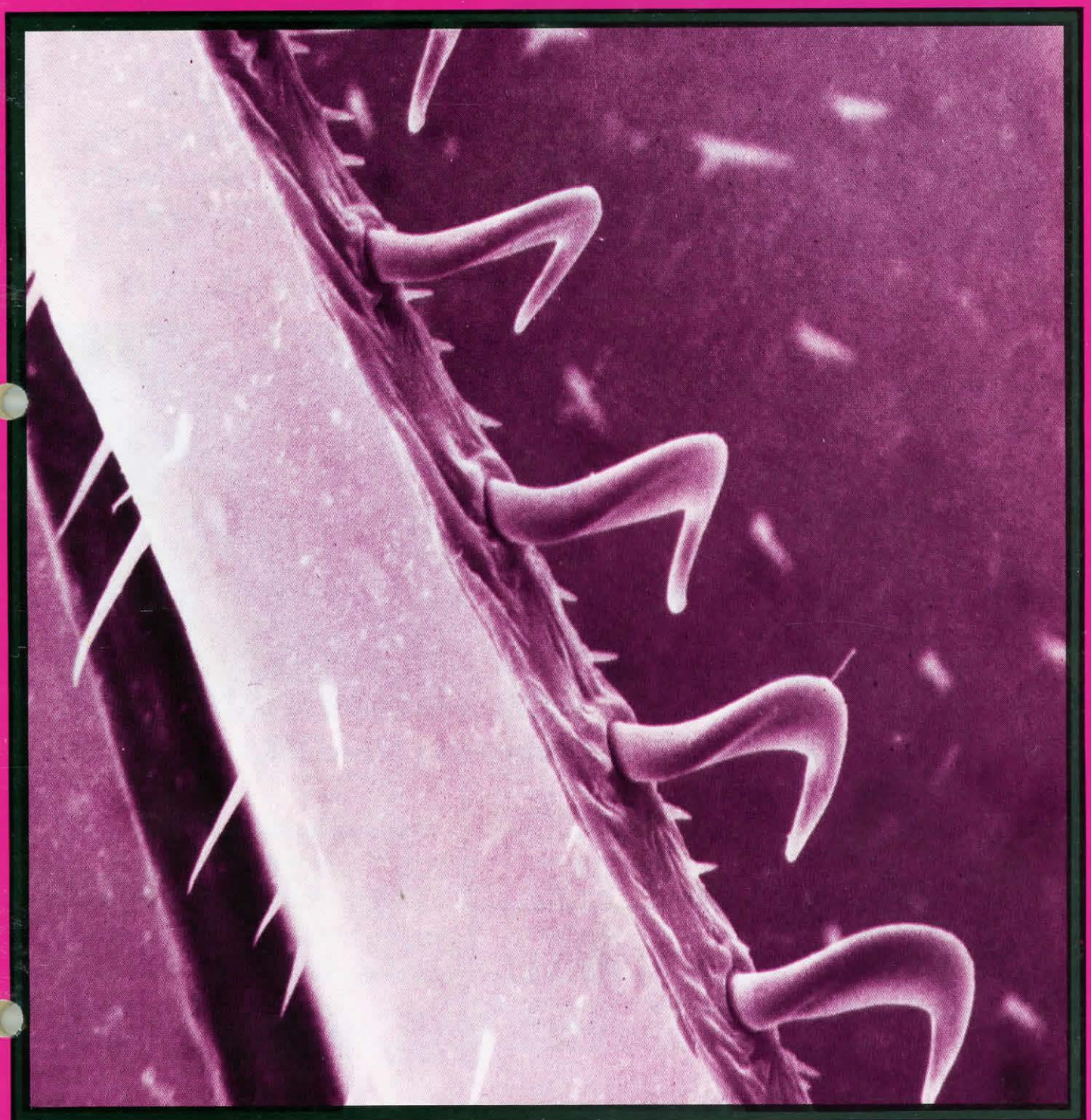
GLEANINGS IN BEE CULTURE

JULY '87



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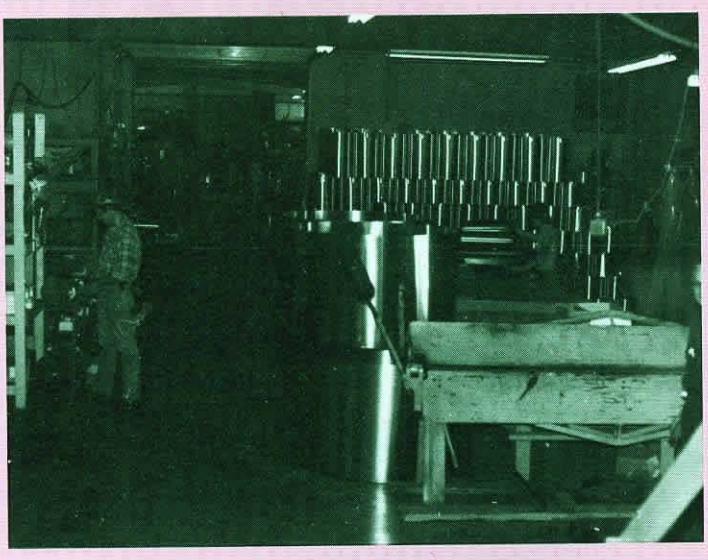

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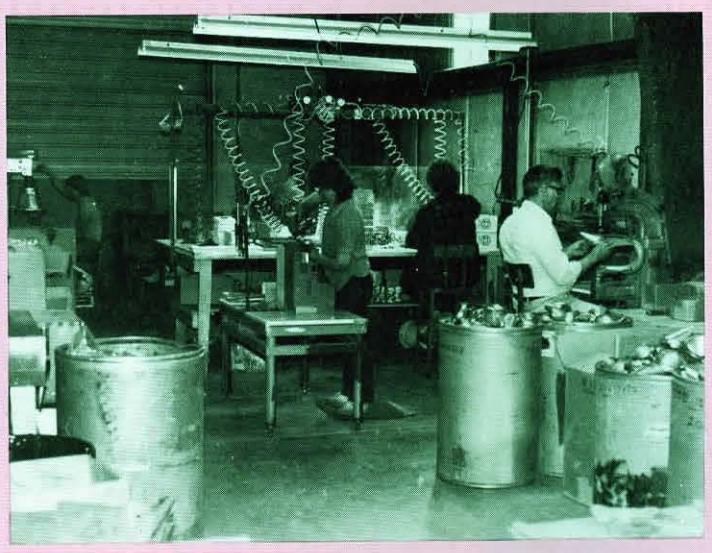

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GLEANINGS IN *JULY '87*

BEE CULTURE

114 Years Continuous Publication by the Same Organization
(ISSN 0017-114X) Vol. 115, No. 7

FEATURES

ARTICLES

COLUMNS

COVER . . . I have a one year subscription to *Bee Culture* waiting for the first person who can tell me *exactly* what this photo is. Close doesn't count and professionals can't enter. Be careful, it isn't *quite* what it seems.

Coming in August

By August the main thoughts on most beekeepers' minds lean toward harvesting and selling the crop produced over the past few months. That, and finally taking a breather from the hectic months of summer. Vacations are planned now too, so keep in mind EAS, WAS and the other state, regional and local events in your area.

In August, *Bee Culture* is going to give you an armload of information on a variety of subjects, starting with teaching — both other beekeepers and school kids!

A Classroom Bee Talk gives some excellent pointers on what to do when talking to the most impressionable audience you'll ever have.

Ignorance looks at dealing with uninformed adults and a *Hive Alarm Fire*, relates a tale about inquisitive adults eager to learn. College kids aren't too old to learn, and we've got an excellent story on educating them too!

Need to know a little on *What pollinates what?* A little beekeeper education is always good.

And more on entering and judging honey shows, what to do and what not to do to help win the ribbon.

Do you use an observation hive or have you been thinking of getting one for your demonstrations? We've got a great article in August on how to *use* and *build* one.

All this, our regular panel of experts talking to *you* about the fine art of beekeeping. Reading *Bee Culture* is a must — coming in August.

ADDRESS CHANGE

If you are moving, please fill in the form below so we can process the change without undue delay. ***Also***, if you have 2 addresses during the year (i.e., winters in Florida and summers in Connecticut) let us know which months you spend where and we can pre-program your address change so you will find ***us waiting*** when ***you move*** — No Delays, No Fuss!

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THE INNER COVER

My friend Lance Ashmore, Apiary Inspector, called recently with a problem he wasn't sure how to handle, looking for some advice. Here's the situation as he explained it.

During the busy season, Lance has several 'summer helpers' working with him inspecting hives in his area. Each year, it seems, getting skilled, qualified help becomes more difficult. The work is hard, the hours long, the pay low, and like Rodney Dangerfield — They get no respect.

Anyway, earlier this month one of his "helpers" found an apiary that wasn't registered. It was loaded with AFB. Of the 14 colonies, all were infected and 4 already dead. After spending what he thought an appropriate amount of time trying to locate the owner (one week and to no avail) he proceeded to burn the frames and honey and scorch the supers, tops and bottoms.

His diagnosis was correct. He took and froze samples from each colony for future reference. His state "requires" burning; preferably after notification of and with the assistance of the owner — but neither is required if the situation is "deemed highly infectious and a threat to populated colonies in the area". There were over 220 colonies within a two mile radius of the infected apiary.

When the burning was complete, Lances' "helper" left the scorched supers at the site, filled in and leveled off the burning pit, and posted the appropriate information in an easy to see place. He had done his job correctly, accurately, timely and in accordance with both the letter and spirit of the law. He had protected the remaining beekeepers in the area by stopping the spread of the disease. He also had done his job neatly and left no undue mess or other unsightly problems.

Two days later the owner gave Lance a visit — with a vengeance and a lawsuit!

It seems that some, but not all of the frames burned had plastic foundation. He didn't have an exact count, but it was about 20 supers worth, give or take a couple. His contention was that since plastic can be sterilized by means other than burning they should not have been burned, and he wanted them replaced, plus payment for the time and effort required to make them up and compensation for his lost crop.

Lance reminded him that he had been in violation of several laws, and if the suit did come up he would have to admit the owner's lack of compliance with those laws. Here's where it gets murky.

Can the owner admit his fault, pay the fine and still sue the Inspection Department? The fine only comes to $25.00 — a drop in the bucket. Or, because he was in violation of the law, does he negate his right to sue for damages? In Lance's state there is no precedent, and the question remains unanswered.

What are the rights, both moral and legal, for the owner of the infected colonies? And, what are the obligations, both moral and legal, of the State to proceed as Lances' summer helper did? Plastic notwithstanding.

I'd like some opinions here, from owners and inspectors because, frankly, I don't know. And the trial is set for October first.

•

ARE YOU A PROTECTOR OF THE NATIONAL INSECT?

There's a fellow in North Carolina who has been in contact with me almost weekly for nearly 4 months regarding his project of having the Honey Bee become the National Insect. His name is Brady Mullinax, Sr. You probably have heard of this project, maybe from Mr. Mullinax himself. He certainly has made an impact lately.

I think his idea, and the proposed Legislation (H. J. Res. 171, Designating the Honey Bee as the National Insect) is a grand scheme, and should be supported by every beekeeper in the country. Writing to your congressional representative, voicing your support and urging theirs, is the appropriate action here. I've printed the Joint Resolution (on page 429) so you know exactly what it is, and why you should support it.

But life is never as simple as one would like. There is competition for this honor — The National Insect — ***The Monarch Butterfly.***

This cause is championed by The Entomological Society of America. This 10,000 member organization is launching their campaign as part of the 1989 Centennial Celebration. And they are well represented in positions of power in this country. Nearly all professionals in the field of Entomology are members. That includes professors, associate professors and graduate students in most universities. It also includes many USDA and APHIS officials in this field, as well as many of the crop consultants and independent insect research organizations. Among these folks are many of the researchers in the pesticide industry.

One interesting note is that probably most, if not all, honey bee researchers in this country also belong to the Entomological Society.

The Entomological Society produces several flashy bulletins each year dealing with both pure and applied research. Plus calendars, meetings (national and regional) and other benefits.

Their claim is that the Monarch is easily identified by nearly everybody, it is a North American Native and it is not a harmful insect. All good points.

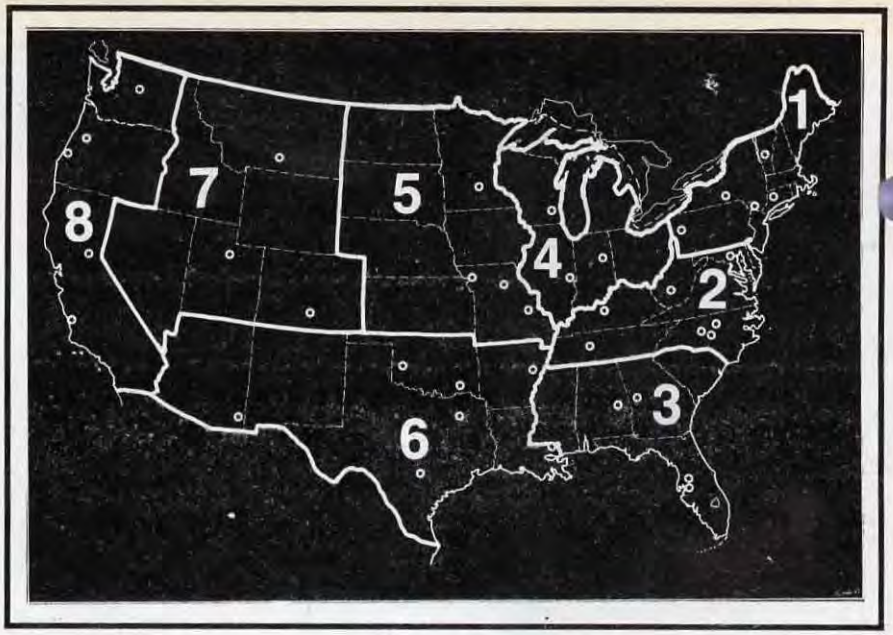
The benefits of the Honey Bee are well stated in the resolution and I don't think I need to emphasize them further.

But benefits aside, I have trouble identifying with and boasting about being represented by a *butterfly*. Especially the Monarch. Although they are native, they vacation all winter in Mexico, they eat nothing but milkweeds and on a good year will clog my car's radiator.

I'm not sure what other creatures are "National" but when I was in Wisconsin we were

Continued on Page 429

Monthly Honey Report



July 1, 1987

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

Wholesale Extracted	Reporting Regions									
Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	1	2	3	4	5	6	7	8	R	A
60 lbs. (per can) White	34.00	38.00	--	31.80	--	37.67	38.63	39.50	24.00-44.00	37.09
60 lbs. (per can) Amber	31.50	34.30	--	25.20	39.00	33.18	37.00	34.00	21.00-42.00	33.69
55 gal. drum/lb. White	.46	.55	--	.53	--	.61	.58	.56	.40-.62	.56
55 gal. drum/lb. Amber	.42	.50	--	.42	.65	.53	.53	.48	.35-.65	.50
Case lots -- Wholesale										
1 lb. jar (case of 24)	24.80	23.08	--	26.11	20.56	24.17	26.00	21.36	19.20-27.25	23.93
2 lb. jar (case of 12)	22.33	21.47	--	22.75	20.64	22.33	28.13	29.40	17.40-31.15	23.63
5 lb. jar (case of 6)	25.13	25.75	--	24.95	25.50	24.80	25.63	27.50	20.25-30.90	27.79
Retail Honey Prices										
1/2 lb.	1.00	.84	--	.80	.88	.85	.88	.91	.75-1.00	.87
12 oz. Squeeze Bottle	1.22	1.38	--	1.39	.89	1.29	1.21	1.30	.89-1.79	1.29
1 lb.	1.36	1.63	--	1.65	1.35	1.52	1.43	1.44	1.27-1.89	1.51
2 lb.	2.52	2.92	--	2.87	2.59	2.85	2.76	2.46	2.09-3.55	2.75
2-1/2 lb.	--	3.80	--	--	3.15	3.33	3.41	3.45	3.15-4.60	3.49
3 lb.	3.90	4.12	--	3.25	3.67	3.95	3.75	3.43	3.12-4.30	3.76
4 lb.	4.85	4.82	--	5.42	4.29	4.60	4.65	--	4.29-5.89	4.80
5 lb.	6.50	5.72	--	5.88	5.64	5.25	5.38	5.42	4.99-6.50	5.60
1 lb. Creamed	1.75	1.49	--	1.62	2.49	1.51	1.58	1.56	1.25-2.49	1.66
1 lb. Comb	2.25	1.85	--	2.38	--	2.07	1.75	2.25	1.50-2.95	2.07
Round Plastic Comb	2.00	2.00	--	1.85	--	1.80	1.65	1.65	1.49-2.49	1.84
Beeswax (Light)	1.02	1.00	--	.85	1.00	.87	.80	.90	.65-1.25	.93
Beeswax (Dark)	.92	.90	--	.75	.95	.79	.70	.77	.60-1.10	.83
Pollination (Avg/Colony)	24.50	16.25	--	27.50	10.00	21.75	23.00	18.33	10.00-27.50	20.04

Honey Report Graph Features

On the far right hand side you will see two different columns. The first, labeled "R", is the price range of prices reported from all contributors -- lowest to highest. The second column, labeled "A", is the average price of a particular commodity across all regions. Example: the range in price of a 1 pound jar of honey sold retail is $1.27 - $1.89 and the average price across the country is $1.51.

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

Example: Region 1 has a price index of 1.00 this month and remaining regions are compared to that index.

•Region 1.

Price Index 1.00. Sales slow to moderate, but some bright spots in NE. Flows steady to heavy, generally early. Colonies building well, with swarming low (dry areas) to high (adequate moisture).

•Region 2.

Price Index .85. Sales steady, prices and demand normal. Colonies in excellent condition in nearly all areas. Disease and swarming below average, but both high in isolated spots. Flow somewhat early. Dry areas behind and prospects dim for good year.

•Region 3.

No report.

•Region 4.

Price Index .71. Sales and prices increasing, with some new honey already for sale. Early flows generally good and strong colonies expected to produce well.

•Region 5.

Price Index .70. Demand and prices rising. Dry areas may have problems, as well as areas with late freeze. Potential for most of region is good, providing adequate moisture continues.

•Region 6.

Price Index .87. Sales steady as are prices. Excellent early flows in Texas, combined with strong colonies, have produced bumper crops already. Prospects for remaining season superior.

•Region 7.

Price index .98. Sales steady, prices increasing. Erratic weather has hampered early crops along with grasshoppers. Moisture short in many areas but seems to be increasing. Potential good but need rain.

•Region 8.

Price Index .93. Sales normal to above, prices steady to increasing. NW region doing well, but dry. Colonies generally in good shape. Southern regions dry, causing reduced flows, near disaster in places. Pollination contract prices dropping along with local prices. Moisture (and cooperation) needed.

Mailbox

NATIONAL INSECT

Dear Editor:

ATTENTION: ALL BEEKEEPERS, HONEY LOVERS AND INTERESTED CITIZENS OF AMERICA.

We need your support to make the honey bee our national insect. Please contact your Representatives in Congress and the Senate, asking them to co-sponsor and support the honey bee as our national insect. A bill is now in the Congress H.J.R. #171 and has been referred to the House Post Office and Civil service Committee.

The success of this movement depends on the friends of the honey bee. Please write your State Representatives and let them know how important the honey bee is to all mankind.

The honey bee pollinates our flowers, vegetables, fruits, seed and nut crops. We owe her thanks and should honor her as national insect in appreciation for the tremendous amount of work she does for all people.

Thank you in advance for your support. Let me know if I can be of any help.

Brady W. Mullinax, Sr.
330 Joyce Lane
Kernersville, NC 27284

MN MEETING OF MINDS

Dear Editor:

There have been, in the last four years, 25,000 colonies killed by honey bee regulators fighting the tracheal mite. There has been one human death, damaged health, enormous anxiety, five bankruptcies and at least $5,000,000 in lost income.

The mite, at its very worst, would never do the damage that the Scientists, the Regulators and let's face it, the Beekeepers themselves have done to beekeeping in the United States.

The African bee will not be a problem in the United States — the Scientists, Regulators and some Beekeepers will be.

Enough!

To stop this, Beekeepers must work together. There is going to be a meeting of Beekeepers interested in developing ideas to counter the imposing of quarantines and the killing of bees as solutions to our problems.

This meeting will take place during the Minnesota Summer Meeting at Fergus Falls, the 16th, 17th and 18th of July.

Please come. Please help.

Jim Powers
Powers Apiaries
4 Holiday East
Clemson, SC 29631

IN THE HEAT OF THE MOMENT

Dear Editor:

Being a rainy old day, I was glad to see the June issue of Gleanings with the beautiful cover in the mail.

But when I opened it to *The Inner Cover* I was sorry to see "damn" and "Hell" used so recklessly.

This is the first time I've seen such language in any bee magazine. While I know it is commonly used on TV now, it is not proper to use in a magazine like yours. Please do not demean *Gleanings* with language like this.

Stuart Kuik
10806 Willowisp Dr.
Houston, TX 77035

ABF WASHINGTON REPORT

Dear Editor:

I thought your readers might be interested in a couple of things that are going on in Washington that are of great importance to the beekeeping industry.

First is the fact that the ASCS/USDA ran out of money several weeks ago and had to stop making any new loans on honey and other commodities. The House of Representatives approved a supplemental appropriation bill several weeks ago but action in the Senate has been stalled by very lengthy debates on a variety of features of their proposed bill. One of the features that has attracted the attention of many senators and was the subject of some very negative comments is the proposal to lift the $250,000 ceiling on honey loan payments.

Those opposed to lifting this ceiling point out that a quarter of a million dollars isn't exactly peanuts and that those few who want more may be a little greedy!

While the suspension of the loan program hasn't had any affect on beekeepers in most of the country, it certainly is causing a lot of hardship for beekeepers in Florida and other areas of the country where the honey crop is made early in the year.

Secondly, we expect soon an announcement that the USDA will begin work on the joint APHIS/ARS Integrated Plan for Control of Africanized Bees in southern Mexico. Responding to intense pressure from "our friends" in Congress, this program which earlier was referred to as the "Barrier Plan" will be funded by redirecting uncommitted funds in their current budget so that no new or additional funds are needed.

This new proposal which is a scaled down version of the original plan will be implemented in the narrow neck of land in southern Mexico between the Gulf of Tehuantepec on the Pacific coast and the Bay of Campeche to the north. This project will provide an opportunity to test at very little cost, the various theories or procedures that, if successful, may not only slow down the advance of the Africanized bees, but significantly modify their behavior as well.

Continued on Next Page

MAILBOX... Cont. from Page 389

Frank A. Robinson
The American Beekeeping Federation, Inc.
13637 N. W. 39th Avenue
Gainesville, FL 32606

COMMENTS FROM THE NECTAR COLLECTOR

Dear Editor:

I found CARL KALTHOFF'S letter (Gleanings, May 1987, p. 265) informative and interesting, as he preached the pious paeans of bluevine honey, that mild, light amber, delicious honey that 'never' granulates. It triggers pleasant memories since I have in my collection of 50 state nectars and 39 international ones covering 84 different floral sources, two bottles of bluevine. (*Gonolobus laevis*, also known as climbing milkweed, wild sweet potato vine, devil's shoestring, sand vine and anglepod. It does granulate, but very slowly.)

My first surprised acquisition arrived from Kalthoff Apiaries, Lexington, MO on November 25, 1980 in response to my maiden attempt at apian writing ("I'm a Nectar Collector", *Gleanings* November 1980, p. 590). A year later it had begun to granulate (see my comment on and a picture of it in Photo 1, bottle on right, *Gleanings*, November 1981, p. 614). It has darkened to amber and shows a slight crystalization throughout, but is not yet cloudy. The second was a gift from E. W. "Bill" Holden, Topeka, KS, now vice president of the Northeastern Kansas Beekeepers Association (producers of one of the best newsletters in the nation), on April 1, 1985. Incidentally, Bill should be given a gold medal for standing up to UPS: his original package was returned as "unclaimed" despite the fact that I've been living at the same microminifarm for the past 30 years but he forced United Parcel Service at his end to accept it once again and send it back! (His is twice as light as Kalthoff's but shows twice the granulation — it's cloudy. It too is deelectable.)

Back to the show-me gentleman. Reading his honey background was quite illuminating — so many years after the initial contact. In between then and now, I have since noticed that bee master Richard Taylor dedicated his excellent *How-to-Do-It Book of Beekeeping* "To Carl Kalthoff, master beekeeper and friend", one of the two proofreaders of the original version.

By the way, I wish to thank all the other *Gleanings* readers also who gave/sent me their sweet stuff spontaneously after my five-part series on nectar collecting (July-November 1984 issues), to wit: Rick Sutton, Lancaster, KY; Richard Taylor, Trumansburg, NY; Rider Apiaries, Frogtown USA, Morrisonville, WI; J. Edward Tillman, Ellicott City, MD; Bardwell Montgomery, then W. VA state apiarist; John A. Dekrey, San Diego, CA; David/Sally Hermansdorfer (through surrogates), Ashland, KY (their label reads: "Killer Bee Hormone Honey: Put the Zing back in your Stinger"); Ron Hanson, U. S. Army, Grenada; Vern F. Smith, Fredericton, New Brunswick, Canada (he even returned my freewill offering!); Harold Liberman, Upper Marlboro, MD; Kalman Chaim, apial collector from Kfar-Saba, Israel; bee inventor supreme Roland Bell, Ft. Worth, TX; Kiwi Berti Stringer, Blodgett, OR; Fred E. Witty, Tampa, FL; neighbor David Slater, Ellicott City, MD; honeypot collectors Atsuo/Yoshio Inoue, Nagoya, Japan; Raymond Churchill, Watertown, NY; Gerald Loper, Tucson, AZ; Robert Cole, Blowing Rock, NC (now EAS chairman); my world-hopping sister-in-law from Pittsburgh, PA, Dorothy M. Iannuzzi; next-door-neighbors

Continued on Next Page

MAILBOX... Cont. from Page 390

Sam/Jean Manganello; my older sister Angela I. Nadeau, Gettysburg (surrogate for William Norton of the State Department); Thomas Ross of Ross Rounds, Massillon, OH; Troy Fore, Jesup, GA; and *most especially*, the honeypot collector from the Blue Grass State, James M. Steed, Richmond, VA whose freewill contributions originating from all over the world are literally too numerous to mention.

John Iannuzzi, Ph.D.
The Nectar Collector
RD 4
Ellicott City, MD 21043

MORE ON SWARMS

Dear Editor:

I captured 154 swarms from trees, houses, etc. for 5 or 6 years in the city of Ft. Worth, TX. My "fone pool" number was with the city departments that I might get into bees since moving here in 1972.

Analysis of my records and findings might shed light on African Bees as to Europeans(?) I found here. I came home with bees variously assorted, with and without queens, one or more, in the captures . . . about 10% really "hot" and angry and about 25% really docile . . . just all kinds from all kinds of places.

I managed to work up some 40 colonies out of all this which I placed back into the neighborhoods of capture in that they knew more about source and pasture than I. I established quite a few outyards in this way, scattered about.

Funny thing, however, (hypothetical African application) was that the capture areas seemed to major in the southwest quadrant of the city. I do not understand this aspect, but I guess they do. I suppose that Africans will also be selective if they arrive. My 154 conglomerates were taken "as is" regardless of whatever. But bees were not everywhere, but the public doesn't seem to know this.

I like bees and I worked at it, all phases of the business. Sad to say, I have been in the business three times . . . and put out twice so far. My, my. 130 colonies in Snyder, TX where crops were plowed under and mesquite, catclaw and salt cedar were "chained" before I found out and that took me down to 10 colonies. The 40 colonies aforementioned were reduced to 8 in 1981 due to a hot 7 months without rain. So I am somewhat settled down using my "laboratorial bee back yard" pointed to outside-the-hive managements and queen maintenance.

I kept notes, dates and addresses in a statistical manner and visited with the bee sector people. When in need, they took defensive actions, and they definitely did have need occasionally. If bees seem to populate and require defensive safeguards, means should be devised to stop the menace (?) at the source. But again pointedly, bees are not everywhere but you cannot tell the population that very well. 75 of the colony removals were never re-occupied again. How come? Why not?

Maybe we beekeepers have been getting off easy, more or less, by not exercising better vigilance in managing European (?) stocks and the public has been quite kind to "our beneficial insects" by holding down on complaints. Further, many wish to have bees by purchase or by capture. This is fine and well until they swarm. The critters jump the fence and run off. They have to be chased down and brought back home. Something should be done about that, and is tried by shuffling frames and queen/drone traps, but need more vigilant efforts and such is an extension of the "keep 'em home" programs of progress.

And now, in retrospect, my pride is wounded. I thought I could clean out this menace (?) by going after them . . . by doing a civic duty as well as personal things. Everyone was glad to see me coming to help. But looking at the statistics shows that I was not making a dent in eliminations.

And, surprising, I was adding to the melee by allowing my own colonies to swarm, try as I could, using all types of directives to stop swarming and letting them escape unawares.

It comes down to stopping the menace (?) at the source, and means/methods and manipulations by beekeepers to work this out, this escaping trigger which bees have built-in. A better means/method of traffic control right there on the landing board would keep everyone happy; workers stay put, less frame shuffling; diminishes errant and unwanted colonies about; less gas and oil; and no climbing trees.

African/European . . . Parallel/Parallel. Control on the flight board is best with drones and queens and workers. All beekeepers have handled hot swarms and colonies, and take defensive actions. There are very effective ways. Yet, stopping on the flight board is the best barrier.

May I digress: We do not have bears hereabouts, but we do have little boys who chunk hives and set fire crackers off in them. We do have neighbors who set pans of water out for birds and pets. Further, I was retrieving a swarm from a limb and atomizing it with water to make the cluster draw up and calm them, and some of the wet bees fluttered to the ground and did not go into my screened catch pail when I bumped the limb. I searched the fallen bees for any queen, and there was a big fat toad taking advantage. And moving trailors in and out of sandy land . . . the usual things, of course.

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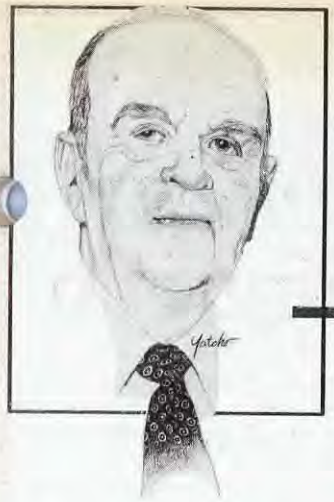

KOOVER'S KORNER

By CHARLES KOOVER • 1434 Punahou St. #709 • Honolulu, Hawaii 96822

"The conventional entrance we give our bees is an abomination compared to what they select themselves"

Mae West used to say, "I don't care what they say about me just so they say it." Mae West was an actress who needed all the publicity she could get. I am an old man who likes to help beginner beekeepers as I have kept bees for 40 years as a hobby.

And I don't like bad publicity, it hurts. Nobody likes to be criticized and I am no exception. Writing for a bee magazine is a labor of love. It takes lots of time if you are going to say something worth the printer's ink. And the pay is poor considering the time it takes. I've been criticized lately so if my column disappears, you know what happened. So much for that.

A Different Type of Entrance

All my beekeeping has been in California and Hawaii, truly semi-tropic climates. I know very little about wintering bees. My bees could leave the hive every single day of the year for whatever business they wanted. So how can I tell you how to keep bees under whatever difficult climate you have? No wonder beekeepers would and could pick on me. I had it too easy. But basically it's all the same wherever you live. They need a nest that gives them protection and an entrance they can protect. And that's what I want to talk about. I have simplified the excellent slatted rack the A. I. Root Company sells. I brought it to their attention after a visit to Hawaii where Richard Bovard had perfected the Carl Killion slatted rack with a four inch deep entrance guard. Come to think of it, bees in their right mind never select a nest in the wild with an entrance right next to the brood. For really and truly, that's what a man-made bees nest is like. Exposed to the wet and cold and especially their enemies right at the front door.

I had a couple of pictures made of it so you can have a good look. The cost is practically nil and you can make it yourself from scrap material lying around. You can stick it right into the entrance if you use the Eastern floor board with the deep side up. And if you don't like it you can pull it right out. I can't tell you what it will do for you. I got the surprise of my life when I found not only drone cells but also queen cells right above the entrance on the bottom bars of their brood combs.

Topside of the slip-in board. This is the Western bottom board. The brood-chamber is attached with 4 hive staples. 2 spring slats bring it up to the proper beespace height. 3 more slats nailed on top of the stationary ones raise it to double height. Idle bees can hang up in back.

And they raised queens in those cells. Beautiful queens. I can't tell you why they preferred that location near the entrance *above* that slip in board. All I can surmise is that they feel it is the most protected place in the whole hive. Furthermore it must be the warmest place, free from cold drafts or temperature changes. As for protection, in order to get to it, bees have to walk in 4 inches deep from the outside, then climb the side wall, cross over to the frame on which the drone and queen cells are located and walk back towards the front of the hive. Maybe the experts among you can come up with an answer. Come to think of it, the conventional entrance we give them is an absolute abomination compared what they select for themselves. Way back in a knothole in a tree for instance. Why then did we make them do with what we call the hive entrance? Just because it's easy to construct? But there is nothing deep about that slip-in board. Look at the pictures.

A 1/16th inch board. Masonite or 3-ply veneer. You will find scraps of it at a carpenter's shop. They gave them to me although today everything costs money. The bottom board cleats you can buy from your beekeeping supply dealer. You need 3 long ones to raise the Western floor board to a double bee space. That

Continued on Page 430

SOME THOUGHTS ON HONEY BEE MEDICATION

By HENRI J. DeLANGE, M.D. • 1301 Spring St. 30J • Seattle, WA 98104

This is a tough and in many respects, controversial issue.

Obviously bees were alive and doing just fine without medicines millions of years before there were any humans or medications on earth.

A strong and populous hive has quite some resistance to all types of invaders, just as a strong and healthy human does.

In daily life, all living organisms are exposed to a constant onslaught of micro-organisms, bacterial, fungal and viral, that live all around us and that we can't help but come in contact with. Our system successfully fends off most of them and bees do likewise. This is fortunate because for many of them there are no medicines, as yet.

Occasionally we loose this battle, temporarily. This happens when for some reason we have become weakened and there exists a lag in our immune response starting up. Or, if the onslaught of the invaders is overwhelming, immune system or not, we get sick. This lasts until our system builds up its defenses — antibodies, which literally do battle one on one to overcome the invaders.

Some diseases are more devastating than others. Getting over the sniffles is annoying enough, but thinking about the black plague is another story entirely. And so, for bees to have nosema is debilitating, but to have foulbrood is worse. Fortunately, medication is available for both of these.

Some Pros and Cons of Medication

Some years there may be more diseases floating around than others. There are years that everyone gets the flu — we speak about flu epidemics. The study of how this happens in humans is called Epidemiology. I don't know if there exists an epidemiology of bee-diseases. Be this as it may, knowing what bees all can and do get into makes me think that not only will they pick up nosema easily enough, but also the spores of foulbrood, as hardy as those are. And it may also be a lot more common than we think.

To a strong hive this is not going to be too devastating since they can and will clean it up. Foulbrood is not a disease of adult bees, and as long as they stay healthy they will remove and clean out sick brood. Up to a point. If they are weakened because of nosema or starvation or poor ventilation or an onslaught of spores comes in, they may become overwhelmed. Since we cannot take the risk, we try to prevent this from happening with medication.

The pros of doing this seem reasonable enough. All medicines aim to help a sick person (or hive) heal itself. But there is no medicine that does not have at least some unwanted, sometimes dangerous side-effects. These side-effects can cause problems because they can be so powerful that achieving a cure without killing the patient in the process proves at times a formidable task. Just think about killing cancer while sparing the patient.

What we are looking for in medicating our bees is killing the micro-organisms while keeping our bees and brood alive and healthy.

Preventive Treatments

This is where controversy can slip in, because we give antibiotics *before* a hive gets sick. It may never have gotten sick in the first place. There are specialists who rightfully question the rational of using medications preventively. After all, as long as there is no disease, they feel all we are really left with are the unwanted side-effects. Is that worth the risk? The answer is — frequently not.

What are the risks?

Well, the first is plain — simply for a drug to be so toxic to kill the bee themselves. We know that if we apply the appropriate medication as specified, we don't have to worry about this aspect.

The second is concern about allergies. This means that the drug may work as intended, but at the same time elicit a sometimes violent reaction in a person who comes into contact with it.

How can a person come into contact with medicine I use for my bees? Well, they eat our honey, lots of it. And people can be allergic to all kinds of medicines. Tiny amounts of the antibiotic we use can get into the honey. And it takes a minute amount to make a susceptible individual sick. Penicillin is a famous example. Well, you'll say, but we don't use penicillin. True enough, but Terramycin is related to the tetracyclenes used in humans.

This is why we have to be careful that the medication we use ***does not get into the honey***. We do this mainly by taking the precaution of giving it when there are *no* honey supers on the hive. This is in the fall after the honey harvest, or the spring long before a honey flow. *Timing is important.*

There is yet another problem that we encounter in the use of any medication. It has to do with the response we get from it.

If there is a good response, that is if there is a fast cure, we say that the micro-organism is "sensitive" to the drug. We mean the drug kills the "bugs".

However, if there is little or no response, the micro-organism is said to be "resistant" and the medicine won't touch it. Micro-organisms can become resistant to drugs. This already has happened a lot more than we like. For instance, there are many bacteria which have become resistant to penicillin, though it killed them at one time. It has lost its effectiveness and we can no longer use it. The microorganisms have evolved a defense against the antibiotic and can now deactivate *it* before *it* gets them. When I started keeping bees about 15 years ago we were still using sulfathiazole as an antibiotic against foulbrood. This sulfa compound is no longer approved because it seems to have

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QUESTIONS?

Q. On April 12 this year we found wax moth larvae in some partially filled supers we had saved for spring feeding. We have read that our low winter temperatures kill wax moth eggs and that the moths migrate up from the south each summer. How, then, do you account for the presence of larvae in April?

A. F. Gunnison
Crown Point, NY

A. I have long been of the opinion that, contrary to what has been published, wax moth eggs and possibly the pupae sometimes survive winter in this latitude, in spite of the fact that both perish in a deep freezer at 0°F and below, and your observation, it seems to me, proves it.

Q. Is there any way to keep bees away from humming bird feeders?

Voron M. Baughan
Chattanooga, TN

A. Not that I know of, but it does seem to help if you wait until the humming birds are actually seen and then put the feeder near where they have been observed, so that the birds discover the feeder before the bees do, rather than trying to attract the birds to a new and unfamiliar spot.

Q. My neighbor complains that my bees are a nuisance gathering water from his swimming pool. I tried putting pans of water out in front of my hives, but they ignored them. Is there any solution?

Brian Hardie
Kokomo, Indiana

A. Two things are involved here. First, once bees become oriented to a reliable water source they tend to stick with it even though alternative and perhaps even better sources become available, and second, they reject water that is cold. This is why they sip from the eves of houses so often. These are up off the ground and the sun shining on the rotting leaves in them warms the water. My suggestion: Get a good, ample source of water available to the bees in the spring, before neighbor fills his pool, have it up off the cold ground and in the sun, and have something dark in it, such as old bags, to catch the sun's warmth.

Editors Note: Often an external feeder filled with only water (such as a Boardman) and placed on the colony will stop unwarranted excursions. Remember, keep it full at all times, or they will return to the pool!

Q. I have kept bees all my life. Each July I harvest the honey, completely capped over, extract it and pack i in jars. After it crystallizes I liquefy i by heating it and a layer of foam fo ns. I remove this but another l yer foams up again. What is the rea on, and what can be done?

Fred Schwarz
Clark, NJ

A. If your honey is extracted or stored in the presence of humidity, such as in a basement, then you may be getting a bit of fermentation. The solution is to make sure it is nice and thick and kept away from humidity. More likely you are getting a normal and harmless separation of foam due to the presence of wax particles and pollen. The solution to this would be to let the honey stand in a bottling tank in a warm dry room for a couple of days then remove the foam before bottling it.

Q. People sometimes ask me to exterminate nests of bees that have gotten into their houses. Is there an insecticide you can recommend for this?

Palmer Smith
Covington, TN

A. Use RESMETHRYN. It comes in a spray can. Used properly it is quite harmless to people and animals, but kills bees very quickly. It can be purchased at garden and bee supply stores.

Q. I have a strong colony in two deep and one shallow super. The whole hive is stuck together with burr comb. How can I separate the parts without damaging the queen?

Frank Davis
Delmar, NY

A. Excessive burr comb between supers and hive bodies results from too much space there, as bees fill any space larger than 3/8 inch with burr combs. Neither the queen nor the colony will be damaged by forcefully separating them with a hive tool.

Q. What is the proper speed for a 10-frame extractor? And what size motor should be used?

Charley D. Todd
Elmer, LA

A. Between 300 and 350 rpm is about right for a small extractor. A quarter to one-third horsepower motor should be adequate. When I raised extracted honey I used a motor from a discarded washing machine. The speed can be controlled pretty well by mounting the motor to a hinged board and adjusting the slack on the belt by slipping a little block of wood under it.

Q. Does laughing gas (nitrous oxide) have any permanent harmful effect on bees when added to smoker fuel?

John Turner
Marianna, AR

A. Opinions differ. One expert

Continued on Next Page

& ANSWERS!

by Richard Taylor

QUESTIONS... Cont. from Page 395

who uses it in his smoker claims there are no permanent effects, but this would be hard to show. I have never seen any very good reason for using it, for it seems to me to be an obvious abuse of the bees.

Q. I have had several colonies of bees, started from both packages and from stray swarms, and one by one, the bees have simply abandoned their hives, even after building up and storing honey. How come?

Bob Kiebel
New Albany, OH

A. This is, of course, not normal swarming, for even a colony that throws numerous swarms during a season normally leaves behind sufficient bees, brood, stores and a virgin queen to carry on the colony. When bees simply abandon a hive, leaving it depopulated, it is because they are under some continuous and unrelieved stress. The commonest causes are starvation, that is, depletion of stores; unmitigated dampness; excessive shade combined with dampness, and so on. The solution is to move the colony to higher ground where there is at least some good sunlight.

Q. Can aluminum be used for the tank and baskets of an extractor?

John C. Farley
Columbus, OH

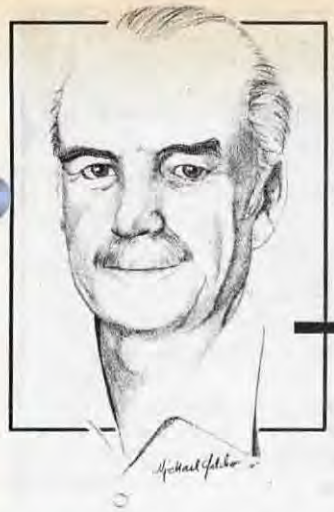
A. Yes, honey is not damaged by brief contact with aluminum, but the same is not true for aluminum paint, which must be avoided.

Q. I'm thinking of going north when I retire. What are some of the best beekeeping areas up there?

Thomas G. Thrash
Union, MS

A. The Dakotas, Minnesota, Wisconsin, Michigan and Northern New York have some of the best bee forage areas on this continent.

Questions are invited. Send to: Dr. Richard Taylor, R. D. 3, Trumansburg, NY 14886 and enclose a stamped addressed envelope for a prompt reply.



THE BEE SPECIALIST

By ELBERT R. JAYCOX • 5775 Jornada Road North • Las Cruces, NM 88001

"How and When to Super; Using Excluders; and New Honey Plants"

Into the Nectar Flow

For new beekeepers and new locations, it may be difficult to decide the best timing for putting on supers for an impending, perhaps uncertain, nectar flow. More experienced beekeepers may even super by the date rather than the season or the appearance of colonies or plants in the field. It is not unusual for rapidly developing colonies to need extra space, supers, well before a main nectar flow just to allow room for adult bees and to help prevent swarming. This was our usual approach in managing bees in central Illinois; by the clover flow in June, our bees were often in three or four deep hive bodies.

But how do you time the addition of supers if you are uncertain about the onset of the local nectar flow and its intensity? We always talk and read about the "whitening" of combs and frame tops that indicates incoming nectar and secretion of new wax by the bees. If we have a waterer near the apiary, we can see that the bees desert it when nectar is available; the nectar serves in place of water.

A couple of my favorite authors give good advice about supering. R. O. B. Manley said in his *Bee-Keeping in Britain* that when a colony is "fit to be supered", you should super it. Initially, you super for more brood space, and Manley says to get the super in place when there are seven combs largely filled with brood. He is less specific about the timing for honey supers: put one on top as soon as the first super is "fairly well occupied by bees".

Andrew Matheson, in *Practical Beekeeping in New Zealand*, makes a good point that waiting to add supers until the bees are "white waxing" the top bars is a little risky. That stage is actually the *latest* a super should be added, and supers must be put on earlier than this during a nectar flow.

Next comes the question of where to put the empty supers on the hive. That's no problem in general because research has shown there is no advantage in placing empties below the ones already in place being filled (bottom supering). If there is nothing to gain by lifting all that honey to put on supers, then just stack them on top (top supering). An exception may be the case when everything is completely sealed: at that time it may be of some value to put the empties closer to the brood nest. Even in that case, I doubt if I would lift off the sealed combs if there were more than one box of them. Both R. O. B. Manley and Andrew Matheson advise top

supering. Manley points out that there are many fancy schemes put forth in the beekeeping literature for adding supers in various orders and locations. He says the idea that bees will somehow fill supers more quickly below the top of the hive is a complete fallacy. They store as fast as they can if they have the room, according to Manley, and bottom supering discourages them.

One of the other disadvantages of bottom supering is your inability, later, to see whether the bees have filled your latest addition without lifting honey again. With top supering, you need only look beneath the lid to see what progress has been made.

Timing Is Important . . .

As noted, the timing for adding the first supers can be critical. After that, you can relax if you have plenty of empty combs — just keep a surplus on the colonies during the nectar flow. We have good evidence from research that empty comb stimulates the bees to hoard more. You will do no harm by oversupering. You can do plenty of harm by failing to give the bees enough storage space. Beekeepers who try to manage bees in two or three hive bodies, pulling frames instead of full boxes, increase their labor while decreasing their potential crop.

What About Excluders?

As part of your management during the nectar flow you must consider the use of excluders. In Illinois, with relatively slow nectar flows from soybean and other summer sources, I found that excluders were an essential part of my bee management. They caused some problems with honey in the brood nests, but that was less difficult to control than "chimneys" of brood all the way up the hive. With slow flows the queen seems to rule in locating the brood nest. When nectar flows are heavy, the bees and the volume of honey they bring in dictate that the queen remains lower in the hive. In a heavy flow, the bees readily move through excluders once they get started, and yields of 400 pounds per colony are recorded in the literature from hives with excluders in place. Comb management, with dark combs in one super above the excluder, helps in getting bees moved upward. They prefer to store nectar in dark combs, yet we get our tastiest

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JAYCOX... Cont. from Page 397

and lightest colored honey from white or nearly-white combs.

In Las Cruces, I have been getting a heavy spring nectar flow from little-leaf sumac. The bees do well without excluders on this flow and the queen rarely goes above the two deep boxes to lay in the 6-1/4 inch supers. If she does, it is usually to lay drone eggs on the lower edge of the combs. The summer flow here is quite slow, giving the queen easy access to the honey supers. An excluder is more valuable at that time than in the spring.

R. O. B. Manley had strong ideas about using excluders. He felt that they should always be used except when you do not have drawn combs and must use a super of foundation. He could not imagine how some beekeepers, including the Dadant family, could manage without them. Otherwise, according to Manley, the queen often occupies every story except the brood chamber. He compared results in apiaries half with excluders, half without, and the results confirmed his beliefs: colonies with excluders were "incomparably more profitable" than the others. The yield of honey was very much greater. Manley reported no relationship between queen excluders and swarming because he used them regularly yet found that swarming varied greatly between seasons.

In contrast to Manley, Andrew Matheson does not take a strong stand about using or not using excluders. He points up their advantages and disadvantages, four of each, and warns about the need to invert an excluder when it is on a hive being broken down. He also suggests putting on an excluder only after there is a ring of honey above the brood in the second deep body. This honey helps to act as a "natural queen excluder".

Improving Honey Quality

The theme of the recently implemented honey marketing order is "A New Era for the Honey Industry". This new era can mean many things, ***not*** just paying a share of the funds needed for increasing the consumption of honey and increasing your market and sales. This is the right time to look at *all* aspects of your production and handling of honey, and to ask why some of the honey in the current loan program is not edible. It may actually be edible, but with poor flavor and the color of used motor oil, it will not play a favorable role in increasing the consumption of honey.

Consider carefully whether you can improve the quality of your honey by fairly simple changes in the way you handle it. Do you keep it clean and covered on the way from the apiary to the honey house? Is its quality maintained as it is extracted? Do you damage all or part of it by your wax handling system? Only a little overheated honey can lower the quality of the rest of the crop. Is it stored in new or thoroughly cleaned bulk containers? How are these stored and at what temperatures? This last consideration can mean the difference between selling "cooked" honey or maintaining the fresh and pleasing flavor of newly harvested honey.

In most areas of the United States, temperatures during extracting and afterwards are often very high. Most beekeepers use fans or other kinds of cooling to keep the temperature in the honey house at a bearable level. But as soon as the honey is in the drums, it goes into a warehouse hot enough to bake any normal human being. *It also bakes the honey!* Beekeepers commonly resent the idea of honey labels that say the honey is "uncooked" and similar wording. But, aside from the fact that such honey has usually been heated to retard granulation, it may have received much less heat than honey stored in an uninsulated warehouse. Such hot boxes are common in New Mexico and other western states, and are surely found across the Southeast and other areas.

We can take a tip from the rest of animal agriculture to protect our honey the way they protect the chickens, turkeys and hogs: by judicious use of insulation and other cooling aids as needed. A note in *Progressive Farmer*, February, 1987, featured uses of a new insulation product called Reflectix. It has two layers of polyethylene bubble pack sandwiched between two layers of aluminum foil. The product is nontoxic and will reflect as much as 97% of the sun's heat. From the figures given in the article, it appears to cost about 24¢ per square foot installed.

According to a chicken farmer in South Carolina, the insulation keeps his chicken coops at 82°F when it is 102°F outside. While 82°F is still above a desirable level for storing honey, much less cooling capacity would be needed than otherwise. For information about Reflectix, you can call toll-free to 1-800-ADD-FOIL.

Although honey cannot respond to the lowered storage temperatures as animals do, customers could respond with their pocketbooks and repeat purchases to a better tasting product that has not been precooked in a beekeepers warehouse. Join the "New Era for Honey" and improve the quality of your product.

Promise & Problems: New Nectar Sources

Farmers in many countries of the world including the United States are looking for alternative crops that could get them away from corn, wheat, cotton and soybeans and give them additional income. In England, farmers and research scientists are looking at many different possi-

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JAYCOX... Cont. from Page 398

bilities, many not suited to the English climate. These include sunflower, soybean, navy bean, coriander, borage, evening primrose, fenugreek and vetch. Some of these have promise as flavoring and coloring agents (in gin, meat and curries) or as sources of oils and pharmaceutical products. Several are good nectar sources for bees, including the soybean, which is the primary nectar source in Illinois and other midwestern states. The English editor noted that soybean "has no value for bees".

Not long ago, oilseed rape became a major crop in Great Britain, grown on 720,000 acres in 1985 with the potential for 46 pounds of honey per acre. The crop has been described as "the salvation of beekeepers in many areas" and as the possible replacement for two-thirds of British honey imports.

In the United States, according to Dennis Brosten in *Agrichemical Age*, some Midwest farmers sold their corn last fall for as little as 97¢ a bushel, lowest price since 1971. Little wonder they are looking at other crops including crambe, lentils, lupines, jojoba, rapeseed/canola and sesame.

Canola, or oilseed rape, contains about 40% edible oil and the defatted meal has 37-40% protein. Last year, 14,000 acres were planted in the Pacific Northwest. In Canada, canola is now planted on over 7 million acres. It is an important source of honey in all areas where it is planted. Canola varieties have less of the compound that gives the plants of the mustard family their "hot" taste, and this is reflected in the better tasting honey than that produced from the older varieties of rapeseed.

According to Roger Salquist, president of Calgene, Inc., canola will be "the hottest new crop in the U.S. over the next 10 years". But before you dream of those pretty yellow fields and bigger honey crops, consider that farmers may have trouble growing it because of lack of approved agrichemicals. Approvals by the Environmental Protection Agency are slow in coming, and often lacking, for "minor" crops and "minor uses" of chemicals on major crops.

Another crop of uncertain value for beekeepers is sweet lupine. This is a group of selections of narrow-leaf lupine, *Lupinus angustifolius*, with seeds that lack the bitter alkaloid compounds that have previously limited their food use. The older varieties required heating of the seed to make them edible. Protein content of the seed is a high 32 to 38%. Wild and cultivated lupines in the United States vary in their attractiveness to bees. They may also provide only pollen. Some are attractive and provide nectar that makes a beautiful white honey.

In Australia, 1.5 million acres of the new sweet lupines were planted last year for human and animal food. The plants do well in arid climates and may find a place here in the desert Southwest. Seed production of some species and varieties of lupine is benefited by visits of honey bees. I hope to get more information about this new crop from the Western Australia Department of Agriculture.

Tidbits

Veterinarians in zoos use a variety of foods to camouflage the odor and taste of medicines for the animals. Popular mixes include honey, fruit juices, soft drinks, peanut butter and chewy candies.

Clara Furness had some interesting reflections in the newsletter of the Epsom Division of the Surrey Beekeepers' Association, England. ". . . I received kind and generous help from a succession of old beekeepers. I remember them all as tough, keen, learned, tenacious and I believed them to be pickled in bee venom, for they all appeared to enjoy being stung."§

When it was Bears 8, Bees 0 — I decided to . . .

BUILD A BEAR FENCE

By THOMAS H. KNEPP
706 Scott Street
Stroudsburg, PA 18360

Round One . . .

As soon as I drove into the yard I knew a bear had visited me again. This was about the eighth time I had been raided by a bear in my 40 years of beekeeping. When I examined the damage I found only one hive upset and frames scattered about. In a raid some years ago five out of six hives were scattered about — what a mess that was! It cost the Game Commission over $400 to pay for that damage.

I started to clean up the damage, finding fames scattered 15 or more feet from the hive's location. I collected the frames (most of which were not broken although the foundation and wiring were) and the honey and bees were gone. I thought maybe it was a cub that had paid me a visit because of the rather light damage.

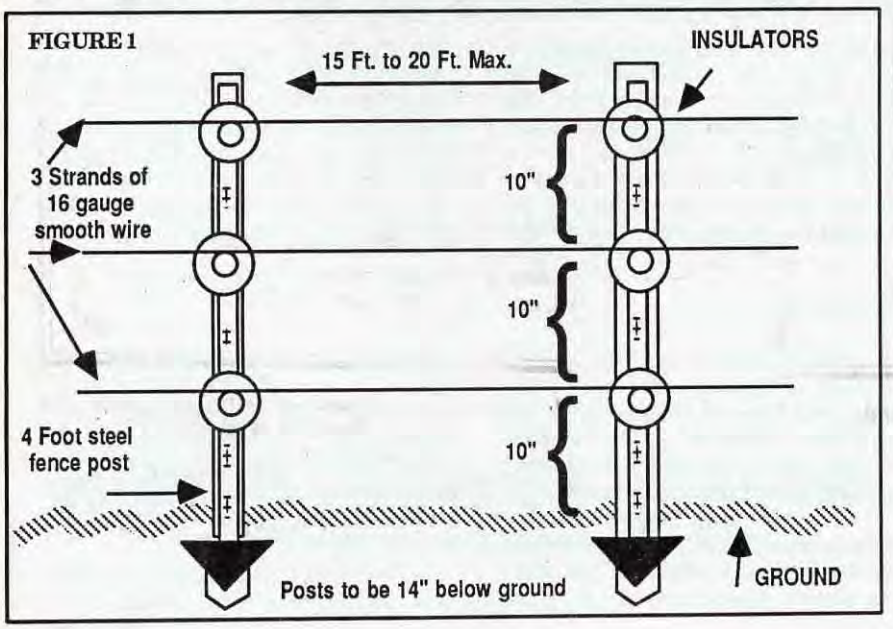
When I got home I called the Game Warden to tell him that once again I had been raided. A day or so later he came to my house and we went to the bee yard. I explained what had happened. He made notes, and before he left he said I ought to build a bear fence. He had advised me about doing that before, but I didn't follow through. He also gave me an information sheet about how to go about the project. (Fig. 1)

Damage done by bear(s) to my apiary. I'd call this fairly heavy damage.

Round Two . . .

Some days later I decided I would follow his advice (1986 wasn't

FIGURE 1



INSTRUCTIONS FOR AN ELECTRIC FENCE ENCLOSURE

Material needed for 30 x 45 foot enclosure:

10-4 foot steel fence posts with three insulators per post
450 feet smooth 16 gauge wire
1 fence charger with battery
1 ground stake with wire clamp
1 weatherproof box to house charger

Steel posts are driven into the ground approximately 14 inches around the area to be fenced with the insulators facing outward. Posts should be spaced from 15 to 20 feet apart. Charger house should be placed inside the fence so that it cannot be damaged by the bear, however, provisions must be made so that it can be reached to turn it on and off. After the 3 strands of smooth wire are strung around the enclosure, attach bacon or ham rind at intervals along the wire. This will cause the bear's nose or tongue to come in contact with the electric fence, thereby insuring a proper introduction of the bear to the fence on the first encounter.

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BEAR FENCE... Cont. from Page 400

a good honey year for several reasons, and I didn't want any more bear damage) so I set to work. First I measured the length and width of the yard so I would know how much wire to buy. The plot was about 53 feet 5 inches long by 8 feet 11 inches deep, making a rectangular yard housing nine hives, requiring just over 375 feet of wire to enclose it.

Later I went to Canfield's Agway, a farm supply store, and bought:

8 round fence posts, 6' long by 3/8" diameter	$13.52
1 bag yellow plastic insulators	3.89
2-100' rolls wire, 16 gauge	7.38
	$24.79

What about a ground post? Canfields referred me to an electric supply store where I bought an eight foot post. When I asked about the eight foot length I was told it was a state requirement, so eight foot it had to be.

1 ground rod, 8'	$4.50
1 ground clamp	.90
tax	.33
	$5.73

My 6 volt "hot shot" battery I had previously used to electrify a cherry tree in an orchard was worn out so back to Canfield's I went and bought a new "hot shot", and an additional roll of wire I needed to finish enclose the yard.

1 6 volt battery	$16.95
1-100' roll, 16 gauge wire	3.69
	$20.64

Even with the 300 feet of wire I had previously bought I didn't have enough so I went back to the farm supply store and bought another 100 foot roll.

1 roll, 16 gauge wire	**$3.69**

I drove four rods for the corners, plus two front and back to support the wires. The rods didn't drive hard for the soil was quite sandy. Then the wires were strung, using the plastic insulators to keep the wires from touching the iron rods I used for posts. In doing this I learned that plastic insulators were not ideal, for they slipped up and down on the rods even though snugly tightened. To keep the insulators in place I wrapped friction tape around them where the insulators were placed, thus the insulators could be secured. To keep each rod in a vertical position I set wooden props in place at about a 45° angle, one end in the soil, the other forced under the insulator.

The 8 foot ground rod was driven near the gate corner, set an inch or two from the three wires that made up the fencing.

I didn't construct a frame gate. Instead I cut three lengths of wire, fastening the right end to the positive upright ("hot") wire, bending the other end back on itself, looping it through a circle I made about an inch in diameter at the opposite end of each strand of wire, enclosing the hives. Now I was ready to hook up the power supply.

I took an old bottom board and placed on it an old deep hive body, and covered it with a hive cover. This

Continued on Next Page

THY HONEY IS SWEET

By Blane E. Rogers

"Oh, thy honey is sweet" . . . said the bear to the bee.
"If I leave you alone, would you give some to me?"
Said the small golden bee, "Not to you or to them,
Those keepers of bees; for the honey to us, is a fine golden gem."

"Oh, trust me, Ms. Bee" . . . said the bear once again.
"My hunger's the strongest this year it has been."
"And I feel that the winter is upon us at last;
And the days of the harvest have all since but passed."

"Mr. Bear you have fat, much more than you need;
You're more healthy by far than your lingering greed.
The grey skies have come, it's time you should leave,
Goodbye Mr. Bear!" spoke the small golden bee.

"Wait!" said the bear, not feeling too well.
"The scent of your honeycombs, I clearly can smell.
With the fragrance of blossoms that grew in the dell,
A nice morsel of honey would surely taste swell."

"Do not drool by our nest, Mr. Bear, if you please;
For the honey is ours, all of us bees.
Do not hunger for treasures other than yours."
Spoke the little bee plainly, as she stood by her door.

"You are lucky, so lucky Ms. Bee I can see;
For making your home in this hollow oak tree.
For those keepers of bees cannot bother you here,
And I'm sure that your honey with me you will share."

"Well, Mr. Bear," spoke the humble Ms. Bee . . .
"It makes me so happy you have praise for our tree.
For if too much smaller, you'd have quite a feast;
But it's larger by far than the largest of beasts."

"You're not getting my message, you don't understand."
Roared the bear, getting louder and quite out of hand.
"My arms are so strong, and my legs and my feet . . .
I can rip up your tree, and delight in your sweets."

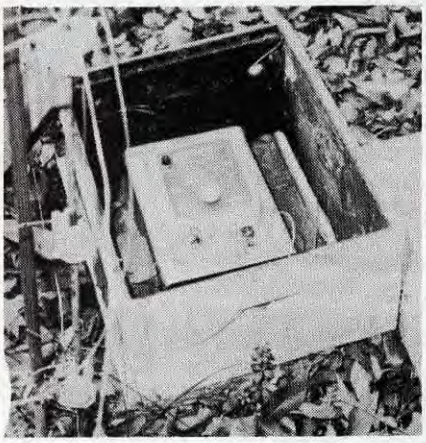
And the little bee flew down and sat on his nose;
And she said with a grin, "Mr. Bear you should know,
We will fight to the finish, there are thousands of us . . .
Honestly, I don't think it's worth all the fuss."

As they stared at each other, the wind started to blow,
And wouldn't you know it, it started to snow.
Ms. Bee flew back up to the hole in her tree,
"Get to bed Mr. Bear, it IS winter you see."

As the bee went inside, the old bear growled . . .
But the snow was falling hard, and the wind was a howl.
"You are clearly correct Ms. Bee, it IS winter today,
To my den I am headed, but I *shall* feast here one day."

BEAR FENCE... Cont. from Page 401

made a rain-proof container into which I put a Sears 6 volt Battery Fencer. I didn't have to buy the Fencer because I had it left over from my cherry tree electrical set-up. Then



This is the northeast corner of my bee yard showing the old hive used to house the Sears Electric Fencer. Two plastic insulators are shown on a corner post. The slightly heavier post shown to the left of the corner post is the 8-foot ground post.

I placed the Fencer in the dry hive, made certain the ground wire was on the ground post, and the positive wire on the "hot" line fastened to each of the encircling wires. I turned the control to "on" and the Fencer ping-ping-pinged — it was working.

Now the bait. I went to a grocery store and bought a pound of the fattest sliced bacon on display.

1 lb. bacon **$1.29**

This was taken to the bee yard and hung (I shut off the Fencer) on the wire at various places about the yard. Now, Mr. Bear, just you use your nose to smell that bacon, or your tongue to taste it, and you are in for a surprise — a stiff, hot one.

My total cost of the project was:

8 posts	$13.52
1 bag insulators	3.89
4-100' rolls wire	14.76
1 ground clamp	.90
1 ground rod	4.50
tax	.33
1 6 volt battery	16.95
1 lb. bacon	1.29
	$56.14

I must say that the old hive I used as housing for the Fencer worked very well. Once when I opened it I found the nest of a wood mouse inside. I think she later raised a litter of young; I never did see any of them.

Shortly after I had rigged the fence I was concerned whether it worked. In no way was I going to touch one of those "hot" wires to find out. Fortunately I have a nearby

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SOME 'SHOW ME' PHILOSOPHY IN THE 1920's

Submitted By DR. MICHAEL ROLLING

In the 1920's Mr. L. A. Schott was a regular contributor to the now defunct journal, *The Beekeepers Item*. This journal carried first hand reports from beekeepers in many different states. Though many of his remarks are frivolous, many take aim at ideas he believed needed attention. The following represent samples of his wit and wisdom; keep in mind you are in rural America in the 1920's.

The American people nowadays eat with their eyes. So if you are a producer of comb honey, keep this in mind.

BETTER KEEP BEES BETTER, OR BETTER NOT KEEP BEES.

"You can't go wrong in the Ozarks," but you can go broke, as four years spent out there has convinced me.

To get soft drink bottlers to use honey in their products would help some, but it would not be a drop in the bucket to the amount of honey that could be disposed of if you could get up some kind of recipe for honey in Home Brew.

To hear a man say that the moths have killed all of his bees is always good news to me, for then I am sure that there is one less of the old school of box hives.

Anybody can keep bees, but it takes brains and brawn to make bees keep you.

Blow flies at the entrance of a bee hive is a pretty good sign that there is something rotten in Denmark.

I shook bees so much last summer (foulbrood), that it makes me shake to think of it. I even had a dose of Chills and Fever, and I shook for over a week, or until the Dr. broke it up, but never mind, we are cleaning up here in Missouri and don't you forget it. The registration law did it.

My curiosity was aroused recently when I noticed one of my price cutting friends walking ahead of me and stretching out his arm whenever he took a crossing or turned down a street. I ventured to stop him and inquired why he did this. The man made no secret of it. "It's all I have left of my motor car," he replied.

L. A. Schott's Questionnaire

1. Are you married or single? _____ Why? (Please answer fully)

   _____

   _____

2. Did you withdraw any money from the bank last year? _____
   If so, where did you get it to put in the bank in the first place?

   _____

   Surely not from bees?

3. Are you on friendly terms with your relatives? _____ If so, why?

   _____

   _____

4. Can you give us the name and address of anyone who has less intelligence than yourself, yet making more money out of their bees than you? _____

   _____

   _____

5. When the bee business is low during the winter months, do you wear a belt or suspenders? _____
6. State average monthly grocery bills and payments, if any.

   _____

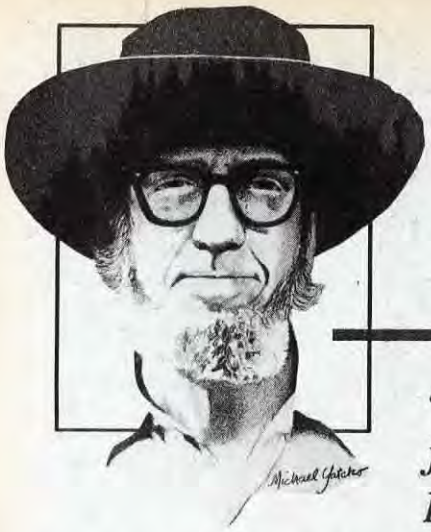
7. Do you drink? _____ If so, where do you get it?

   _____

8. Exclusive of bootleggers, how many people are dependent on you for support? _____
9. Do you keep chickens? _____ Does your wife know it? _____
10. Are you troubled with cold feet? _____ If so, whose? _____

    _____

If you enjoy this stuff, don't tell me — tell it to the editor.



BEE TALK

By RICHARD TAYLOR • R. D. 3 • Trumansburg, NY 14886

"A truly successful beekeeper does not keep bees just to get honey, but to get something far more precious — the happiness of the pursuit itself."

Things do not always go just as they should in the bee yard. Indeed, the possibilities for mishap and frustration are endless, especially in spring, when the bees' urge to swarm is in direct conflict with your urgent desire to get a good honey crop. But this spring, I rejoice to note, things have gone just about right in my bee yards, and for once I feel quite in control of things. My swarm prevention system seems to be working almost to perfection, and the bees were earlier than usual getting to work in the supers. Swarming is the one big problem for comb honey beekeepers like me, but I seem to have solved it, not perfectly (nothing is perfect), but adequately, by the method described last time. Beekeeping, to be joyous, must be relaxed, and that relaxation must result, not from neglect and indifference, but from good planning.

A truly successful beekeeper does not keep bees just to get a honey crop, but also to get something far more precious, which is the happiness of the pursuit itself. For me, that happiness would not exist without the honey crop, but the day to day joys are in the running. If my bees were entirely tended by others, and then the crop simply delivered to me without effort of mine, then I would feel, not rewarded, but burdened. At the end of the season I can point to what I have wrought, with luck, with the blessings of a bountiful world, but also, with the beekeeper's skill. The sense of achievement is mingled with the anticipation of yet another season, when I can set about to do it all again. Sometimes I wish I could live for a thousand more years, to see a thousand more springs, and labor for a thousand more crops of heavenly comb honey. I could never tire of it.

There is a joy to beekeeping that is, I think, unique to the craft. It is quite foreign to most people, and even some beekeepers never pick it up, but some do. I sometimes feebly try to describe it, but I have never really understood it. I have, in what I might call my "other" life, that is to say, that part of my life that does not involve bees, had some considerable successes as well as some crushing and abysmal failures, but both tend to lose significance when I am working in one of my bee yards, at home with nature and the world and at peace with myself. There is something about the bees and the fulfillments I find there that is always the same.

I own a very large library of bee books, accumulated over the years, and yesterday I was reminded of the unique joys I have just been talking about as I noted some of their titles: *The Spirit of the Hive, Bees' Ways, The Mystery of the Hive, The Lore of the Honey Bee, The Golden Bees, The Spell of the Honey Bee, The Way of the Bee, The Romance of the Hive,* and so on. No other animal has received so much attention from writers, and it is no wonder. There *is* something romantic and even deeply mysterious about bees. And it is almost as if our creator had gone to special lengths in making these wonderous creatures the source of the most beautiful and perfect food known to mankind.

Are we in danger of losing these unique and romantic associations surrounding bees and honey that have accumulated over the centuries? I suppose not, but I sometimes worry about it. Nowadays, when people think of bees, they are apt to associate them with such things as mites, African "killer" bees, and things of this sort. And as for honey, I have seen serious writers casually putting it into the same category as isomerized corn syrup! I would not care if I never read another word about tracheal mites. They can be a real problem in package bees but not, so far as I can

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TAYLOR... Cont. from Page 404

discover, for strong and well-managed colonies. Chalk brood seems to be more of a pest than the mites, yet I have not seen any lurid accounts of this as a spreading blight that threatens the industry. Apparently a fungus just is not quite as scary to the imagination as a crawling mite. And as for corn syrup and any other "competitors", well, I am just going to go on producing beautiful snow-white comb honey, and this will speak for itself, as it has almost from the beginning of recorded history.§

Questions and comments are welcomed. Use Trumansburg address, above, and enclose a stamped envelope for reply.

BEAR FENCE... Cont. from Page 402

retired neighbor who dabbles with electricity. I asked him if he would test my set-up and he agreed. He got

Southeast corner of the bee yard showing hive #1, the gate to the yard (to the right of the hive) and the Fencer "house" on the ground to the right rear of the hive.

his tester and we went to the bee yard. He attached the test wires and got shocked, even through the insulation of the tester wires — it was "hot" and working.

Round Three . . .

Several days later he called me and asked if I had put up any warning signs. He thought I ought to have them because someone might not know it was electric fencing and could be dangerous. I went to the Agway store and inquired about warning signs. Yes, they had them. So I bought six yellow plastic signs — one side warns "Electric Fence", the other reads "Posted". These I hung at various places from the top wire. Now I was in business — I had built a bear fence.

The 6 volt "hot shot" lasted about three months, then I had to buy another one for $17.97. I hoped the second battery would last until after Pennsylvania's bear season was finished (it did). Then I turned the switch to "off" when the bears went into hibernation for the winter. Bear hunting season in Pennsylvania lasted three days in 1986. And if you think we don't have bears in Pennsylvania you are wrong. More than 1300 were killed legally in '86. During 1985, ninety were killed on our highways. My own county (Monroe, in the Poconos) supplied 38 to hunters in 1985, so it is no wonder we have bear problems.

A few recommendations

1. Those corner rods (6'x3/8") are too light and far too smooth. They are too pliable to stand the strain of tight wire. To build a bear fence, I suggest you use 4" square or round wooden posts. These should be set at an angle instead of vertical, into a two foot hole in the ground, thus allowing for tightening the three fence wires. I think a turn buckle of sufficient size would take up the slack.
2. Instead of plastic insulators, I use what is known as a "rounder with bracket", allowing the wire to run freely. These are threaded so they can be screwed into the wooden posts; they also permit the use of one turnbuckle at the end of each wire.
3. The ground post ought to be set at least a foot from the fencing. My electrician neighbor says that it is possible for a spark to jump the gap of the inch or so I have in my set-up, between the positive wires and the ground post.
4. Set your old hive body, housing the 6 volt Battery Fencer further away from the positive fencing wire, thus preventing a shock if you're careless in taking off the hive lid.

Integrated Pest Management

in Citrus Groves with an Eye to Protecting Bees

By HERB DRAPKIN
22543 Ventura Blvd.
Woodland Hills, CA 91364

A great number of articles have been written regarding methods of Integrated Pest Management (IPM). This article describes a technique currently being used in the author's groves to integrate beneficial insects with the minimum use of pesticides, and still allow bees to go about their job of collecting nectar and pollen without endangering them.

Hives are normally put in place at blossom season in two locations in the center of two groves. (Fig. 1)

Figure 1. Hives in Grove No. 1 having returned from almond pollination and most supered for citrus flow.

Each group is from 100-150 hives. The surrounding area has citrus groves extending many miles in each direction, east and west. The bees are brought in from almond pollination as soon as they are released from their contracts. If honey stores are depleted and the citrus blossoms are not adequate, the bees are fed.

Protecting the bees also protects the beneficial insects used in this district. The author is a member of the Fillmore Insectory, a cooperative which raises: (1) Wasp *Aphytis melinus* to control red scale and (2) Wasp *Metaphycus helolus* to control black scale. The decollate snail *Rumina decollata* is also produced to control the french snail *Helix aspersa.* The insectory is under the management of Mr. Monte Carpenter whose advice and observations were invaluable.

Beneficial insects cannot function efficiently if the Argentine Ant is present in the trees. This is the same ant that invades your hives and the unprotected flour and sugar in your homes. This little black ant protects the major predators (scales) as a source of food, insect honey dew. This includes not only the red and black scale, but aphids, cottony cushion scale and others. To work, the system must be centered around keeping the Argentine ant *out* of the trees and allowing the beneficial insects to do their job. If the trees were to be sprayed to destroy the predators, then the beneficial insects, as well as the bees would be killed. This is presently taking place in many orchards and groves.

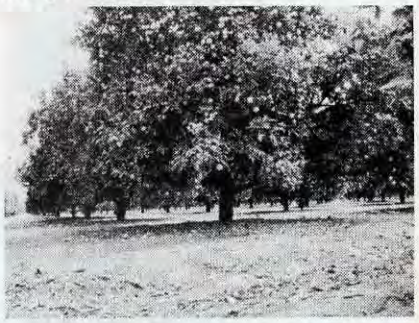

Figure 2. Another view of skirted grove. All have glass wool bands but do not show.

A part of the control method used in this procedure is a recommendation of the Univ. of California, Riverside and is known as skirt pruning. (Fig. 2) This shows the limbs of the trees pruned 14-16" or higher off the ground, allowing access to the foliage *only* via the trunk. All other objects, telephone poles, guy wires, fences or houses must be kept away from the foliage or this will produce a break in control.

Equally as important as skirting, is the second part. A reservoir had to be found to hold the insecticide and chemical to keep the ants and snails from climbing the trunks of the trees and at the same time be efficient and practical in application. I will not go into detail how we found this means but to tell you what is now done. Working with Owens-Corning Fiberglass division, a number of products were tried and a suitable one was found. This is 'Duraglass', 1" thick and 4" in width. The fiberglass is applied to the trunk of the tree by stapling it to itself, and filling in any

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IPM... Cont. from Page 406
crevices and indentations of the trunk with the same material. Thus we form a true barrier from the ground

(Fig. 3). Using a pump that produces a jet stream, a solution of a combination of 4% copper sulfate and a long acting form of Diazonon (Knox Out), 2 ounces per gallon, is sprayed and saturates the bands of fiberglass. 'Knox Out' is an encapsulated form of Diazonon, releasing the insecticide over a long period of time. Time of application is important. It has to be done before the ants emerge from their winter quarters and just prior to flower budding. A second application is made in 2-3 months and followed by a third if needed.

This is basically a ground level application. All of the beneficial insects and bees are now out of "harms way". Bees fly directly to the foliage. None of the nectar and pollen is contaminated by this method of control and the amount of insecticide is small compared to other techniques used. Other benefits to the grove have ensued, such as, preventing the Fuller Rose weevil from climbing the trunk of the tree to deposit its eggs in the calyx of the fruit. An increase of fruit set takes place because our bees are not interfered with in the pollination process.

The author recognizes that the use of an encapsulated form of insecticide will "raise the hairs on the back of beekeepers necks", as they know the damage done to hives when this form is applied to other crops such as cotton or alfalfa. Our method of application *does not* affect the bees and they do not bring the insecticide back to the hives.

This method has been ongoing for four years. There have been no losses to our bees that could be ascribed to this technique. Other applications of the I.P.M. technique could be applied to other agricultural crops in which bees are needed for pollination. All that is needed is a wee bit of application ingenuity.

Hopefully with the coming of Pheromone attractants and an increase in the use of beneficial insects, we may be able to supplement this system for even better control under an I.P.M. system using fewer, if any, insecticides.§

Testing Your Beekeeping Knowledge

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

Colony development and productivity are indirectly related to local weather patterns as well as major and minor floral sources in the immediate area of the apiary. Major honey flows depend on a few plant species which yield nectar abundantly and are readily available. Large acreages of flowers are needed to produce surplus honey. Besides the two or three main annual sources, there should be a great variety of minor plants yielding both nectar and pollen throughout the season to support the colonies between the main flows.

There are three key components to honey production: 1) colony strength; 2) weather conditions conducive to flowering, pollen release, nectar secretion and foraging; and 3) abundant floral sources. It is important for the beekeeper to know what plants are in the area, when they bloom, whether they supply both nectar and pollen and how abundant and dependable they are. This information is of real value in timing colony development and anticipating colony management problems.

Please take a few minutes and answer the following questions to determine how well you understand the interrelationships between weather, floral sources and colony development. The first seven questions are true and false. Place a "T" in front of the statement if entirely true and an "F" if any part of the statement is incorrect. (Each question is worth 1 point.)

1. ___ Nectar is primarily a solution of sugars in water and the basic raw product of honey.
2. ___ Colony management has a greater impact on honey production than local weather patterns.
3. ___ Extrafloral nectaries are specialized plant glands that secrete sugar and they are located within the structure of the flower.
4. ___ Honey bees are able to distinguish between different sugar concentrations and types of sugars found in nectar.
5. ___ The most populous colonies produce not only the most honey per colony but the most honey per bee.
6. ___ Field bees normally deposit their nectar loads directly into cells when they arrive in the hive from the field.
7. ___ During a hot, humid day, nectar sugar concentrations normally increase after the nectar is secreted.

Multiple Choice Questions

8. ___ The sugars found in nectar are derived from the biological process known as: A) Transpiration; B) Photosynthesis; C) Metabolism; D) Respiration; E) Translocation
9. ___ ___ ___ List the three dominant nectar sugars found in honey producing plants:
   A) Sucrose
   B) Maltose
   C) Glucose
   D) Fructose
   E) Manitose
10. Name two effects that wet, rainy weather have on nectar supplies in flowers. (2 points)

    _____

    _____
11. Define the following phrases:
    Nectar dearth _____
    _____
    Honey bound _____
    _____
12. Listed below are several floral sources visited by honey bees in the United States. Please indicate whether these floral sources provide honey bees with nectar, pollen or both.
    A. Nectar source only
    B. Pollen source only
    C. Both nectar and pollen source

    ____ Dandelion (*Taraxacum* spp.)
    ____ Corn (*Zea mays*)
    ____ Maple (*Acer* spp.)
    ____ Golden Rod (*Solidago* spp.)
    ____ Sweet Clover (*Melilotus* spp.)

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MEDICATION... Cont. from Page 394

lost its effectiveness. This is unfortunately happening with a lot of previously effective, *overused* antibiotics.

Finally, there is the consideration of cost. Antibiotics cost. Some of them a lot. Does it make sense to go to this expense if what we are treating isn't there to treat?

Since the risk of loosing a hive is costlier, we medicate.

Some Application Techniques

There are several ways to give medication. I feed Terramycin and fumadil in the fall and in the spring, dissolved together in sugar syrup. As Terramycin decomposes in solution, and thereby looses its effectiveness, I pour the syrup over the top of the frames in several divided batches, made fresh each time. I do this three times, once every three days. This way, it has no time to decompose because it will be picked up fast and fed to all open brood where it is needed, while also curing any present nosema in mature bees. Do not pour it on all at once or it will run out the bottom. Besides, it is also more effective in two or three separate applications. Again, I start this only *after* the honey supers are off in the fall, and well before they are back on in spring. With this method, you must also watch the outside temperature. It will only work as long as the weather is warm enough. I would think probably no less than about 55°F. When it gets below this the bees cannot process the syrup. This technique works quite well here in Western Washington in October and again towards the end of March.

Another method that leaves the Terramycin stable for a longer period, or when it is too cold for the above method is to use extender patties. You make these by mixing 1/4 lb. powdered sugar, 1/4 lb crisco and 1 tablespoon TM-25 (or 2.5

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RESEARCH REVIEW

By DR. ROGER A. MORSE • Cornell University • Ithaca, NY 14853

"AFB and apiary size — a relationship may exist"

American Foulbrood and Apiary Size

Those who have had experience with American foulbrood (AFB) are aware that beginners have, on the average, more problems with this disease than do more experienced beekeepers. However, the data in the publication cited below are, I believe, the first figures to back up this knowledge. Stating in such a bold fashion that beginners have more AFB is not meant to be critical of those starting in the trade. It is merely that when one starts any new vocation or avocation, there is so much to learn that something must be overlooked. Unfortunately, AFB spreads so easily and is such a destructive disease that this oversight is often costly.

During the 1986 season the Apiary Disease Control Program in New York State observed significantly different incidence rates of AFB depending on apiary size. In apiaries with 1 to 10 colonies, presumably those of small-scale beekeepers, 5.4 per cent of the colonies were infected. The infection rate was 3.8 per cent in apiaries with 11 to 20 colonies. Apiaries with more than 20 colonies, had fewer than 1 per cent of the colonies infected; it is the commercial beekeepers and large sideliners who run these yards. If one wants to reduce the infection rate in an area it is important to concentrate on the small apiaries; however, there should still be spotchecks of the larger ones, as one cannot overlook the fact that there was some AFB in large apiaries.

Unfortunately, inspecting the apiaries with only a few colonies is more costly on a per-colony basis. For state inspection programs, inspecting large apiaries is a method of building impressive statistics. Small yards and their owners are often more difficult to find. There is also a larger turnover in ownership of small yards. Still, these data make it clear where much of the problem lies.

Reference

Apiary Size vs. AFB Rate. Page 11 in Apiary Disease Control Program. N. Y. S. Division of Plant Industry, Department of Agriculture and Markets, Albany. 38 pages. 1986.

Pollination of Tree Fruits

The bulletin listed below reviews what is known about tree fruit pollination with emphasis on apples. While most of the material discussed is not new, this bulletin brings the information together in a precise way and will be useful to both beekeepers and fruit growers.

It is pointed out that there are many solitary and semi-social bees that are pollinators, but in a commercial setting only honey bees can be managed and are practical to use. Other bees are not present in sufficient numbers to be useful.

Recommendations on the strength of colonies used for orchard pollination are reviewed. Most publications state how many colonies should be used per acre, but colony strength is rarely discussed. Each colony used for orchard pollination should be in two supers and contain more than 20,000 bees. Colonies should be roughly equal in population, as evidenced by flight activity at the entrances. When the temperature is above 65° F, one should see at least 75 bees per minute entering the hive entrance. That is a good index of what the bees are doing.

Another important subject is how hives are placed in orchards. Bees distribute themselves among the trees quite well when the hives are put in groups of four to six. In larger orchards groups of eight to sixteen may be used.

Increasingly we find growers and beekeepers using written contracts when colonies are rented. This way both parties understand the responsibilities of the other. This bulletin includes a good outline of the points to be listed in a contract.

Crabapple trees are used as pollinizers by some growers. They have several advantages, providing plentiful pollen with minimal space requirements. Crabapples can be planted within large blocks of one apple variety so that orchard

Continued on Next Page

MORSE... Cont. from Page 409

practices such as fertilizing, pruning and spray, as well as picking are made easier. With the usual practice of planting two varieties of apples mixed in the same block, so that they cross-pollinate, there may be problems, as the needs of two varieties are often different. One problem with using crabapples for pollinizers "is the susceptibility of many varieties to the common diseases of apples." It has also been observed that the crabapples should have blossoms of the same color as the apple varieties for which they are providing pollen.

Methods for obtaining adequate pollination in orchards that have been planted to one variety are also discussed. Grafting in pollinizers and using bouquets are mentioned. The use of hand-collected pollen is also discussed; it is a method that involves too much work as far as I am concerned. Considering all that has been said for many years about the importance of cross-pollination, it is surprising how many growers make the mistake of not providing an adequate number of pollinizers when making new plantings.

This might appear to be an odd time of the year to be writing about tree fruit pollination. However, I suggest that now is the time to prepare for next spring. Printing contracts well ahead of time is useful. What is written in the bulletin below is a good place to start. This bulletin is written as a joint publication by three states: Washington, Oregon and Idaho. There is no indication on the bulletin itself where one may write for a copy, but I suppose the state college of each state must have them available from their publication distribution center. There is also no indication of price. I doubt if copies are free but one can always ask.

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Mayer, D. F., C. A. Johansen and D. M. Burgett. *Bee pollination of tree fruits*. A Pacific Northwest Extension Publication (PNW 0282). 12 pages. March 1986.

MEDICATION... Cont. from Page 408

tablespoons TM-10). Roll out between wax paper. This makes about 2 or 3 patties, which you place on top of the frames of the lower box, in between the lower and upper box that you winter them in.

I like this method less because this "slow treatment" is much more likely to foster selection and growth of resistant bugs. Also, you have to make syrup anyway, because that is the way the fumadil is given.

Finally...

In general, follow the dosage as described on the package the medicine comes in, and watch the concentration you are dealing with — TM-25 or TM-10 etc. This is indicated on the package and it makes a difference in the amount of tablespoons you need. And as always — read the label, read the label, read the label!§

A Single Observation on the Nest Cleaning Behavior of a Honey Bee Colony

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

"Not uncommonly, one bee would struggle vainly to move three dead bees that were attached, while nearby three bees were moving one dead bee"

On May 15, 1987, a swarm (approximately 3.5 lbs.) was put in a deep hive body late in the afternoon. The hive body still had the honey bee carcasses of a colony that died during the previous winter. Plans were made to assist the colony with hive cleaning within the next few days after the swarm had accepted the new quarters.

When I visited the colony the next afternoon (approximately 1:30 p.m.), the bees were actively cleaning the hive of all the dead remains and they were doing it very methodically. The following observations were recorded.

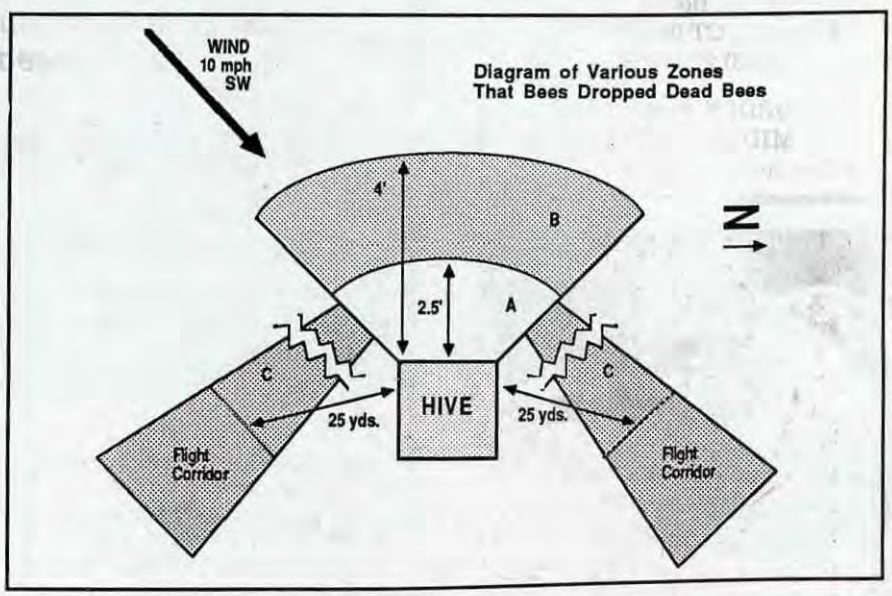
1. Most of the time, more than one bee was involved in dragging a dead bee to the hive entrance. It was quite a chore for the bees. The smallest debris would momentarily snag the carcass causing the bees to struggle to get the body unsnared.
2. Mouth parts of hive cleaning bees were used to drag the dead bees from the hive. Any convenient body part of the dead bee was used as a handle. Frequently, multiple house cleaning bees would attempt to travel in different directions, making the moving task impossible. The carcass was straddled by the house cleaning bee, a suitable appendage gripped and forward movement started. Occasionally, the middle legs of the house cleaning bee would be used to assist the grip of the mouth parts. Even more rarely, wing lift would be employed to insure forward movement.
3. In a haphazard manner, some bees would drag a load to the landing board and drop it there while others would complete the entire task by dragging the load to the entrance and then flying away with the load.
4. Many bees would appear to serve multiple functions. For a while, particular bees would fulfill guard bee roles. They would face the outer entrance to the colony, support themselves on their middle and rear legs while holding their front legs in a grasping posture with mandibles agape. Not infrequently such bees would accost incoming bees briefly, amble around for a while, and then take interest in a carcass and struggle with it for a while. Such bees frequently did not complete the task of dumping the dead bee.
5. While a bee, or bees, were working to remove large loads, other bees would come to the entrance carrying little more than a rear leg, wing or some other body part. Such parts were always carried singly and, obviously, were much easier to manipulate than an entire bee corpse.
6. There was a great discrepancy among bees and their loads. Due to the dead cluster arrangement, tarsal claws or other body appendages would cause several dead bees to clump together. Yet

Continued on Next Page

ZONE A: Initial collapse zone. Most dead bees were dropped within this zone (2.5 feet from the colony). Approximately 85-88% of the dead bees that were dropped near the hive were dropped within this zone.

ZONE B: Secondary collapse zone. Bees that were trying to fly but were overloaded or were struck by a wind gust, fell within this zone. Approximately 12-15% of the dead bees were abandoned here.

ZONE C: Flight corridors that were probably determined by prevailing winds. Bees would gain an altitude of approximately 12-15 feet into the wind before rolling with prevailing currents into one of the two corridors diagramed. Once this corridor was entered, no bees were observed being dropped within 25 yards of the hive.



TEW... Cont. from Page 411

the size of the load seemed to have little effect on the number of bees that would attempt to move the load. Not uncommonly, one bee would struggle vainly to move three attached dead bees with little success while nearby three bees were easily moving one dead bee. In such cases, other bees seemed oblivious to the problems of the overloaded bee. Such heavy loads moved much more slowly, but were none-the-less moved. Over time, the load was eventually dumped.

7. On the day the observations were made, there was a strong wind blowing from the SW. The colonies were two feet from the ground and faced due West. Wind gusts greatly affected flight success. Bees seemed to be unable to predict gusts, consequently at the height the colonies were positioned, luck played an important part in the success of the corpse-laden bee getting airborne. If bees attempted flight only to be struck by a gust, they were instantly knocked to the ground in front of the hive.
8. Only 50% of the bees that attempted to fly with dead bees would become airborne.
9. Of the bees that were blown to the ground (or were simply overloaded and fell), only about 16% were able to become airborne from the ground. Consequently, dead bees on the ground in front of the hive were (inadvertently?) arranged in a definite pattern with the greatest pile of bees being directly beneath the landing board while other dead bees were scattered in a fan shape to a distance of about 3.5 feet in front of the colony. The outer fan resulted from bees that would try to become airborne, fly for a short distance and crash, either because of wind gusts or overload.
10. Once bees failed in their efforts to fly with such a heavy load, attempts would be made to fly from the ground. Efforts would be made from 6 seconds to 1.5 minutes before the flight attempt was abandoned.
11. Once a bee had collapsed with a load, no efforts were made to fly with a dead bee other than the one the house-cleaning bee had gone down with.
12. The heavily ladened bee would fly directly into the wind and climb steeply. The climb was made quickly. When reaching an altitude of about 10-14 ft., the bee would abruptly roll with the wind and be pushed along until fading from view. This behavior resulted in bees dropping carcasses in predetermined corridors. (See Diagram)
13. Dead bees were dropped no closer than 25 yards from the colony. Most bees flew from sight still carrying the dead bee.
14. All drones were dropped in front of the colony — probably because of their greater dead weight.
15. A population of scavengers were already at work disassembling abandoned dead bees. Ants and beetles were the most common insects.
16. Unusable pollen pellets were removed in similar fashion, but did not seem to get the immediate attention that the hive cleaning bees' dead comrades received. Many of the pellets were dumped in front of the colony with no effort being made to remove them any great distance.

These observations were made on two colonies on one day only. The next day, the colonies seemed to have passed the cleaning fenzy and hive functions were more predictable (eg. foraging for nectar and pollen).

Little more than 50% of the dead bees were removed farther than 4 feet from the colonies. However, the other 50% were moved more than 25 yards from the colony. The entire effort was successful because of the concept of work sharing for which honey bees are noted. Approximately 2 pounds of dead bees were removed within 36 hours by approximately 3.5 pounds of living bees.§

Swarms at Sunset

The Case of the European Chafer

By SCOTT CAMAZINE and P. KIRK VISSCHER
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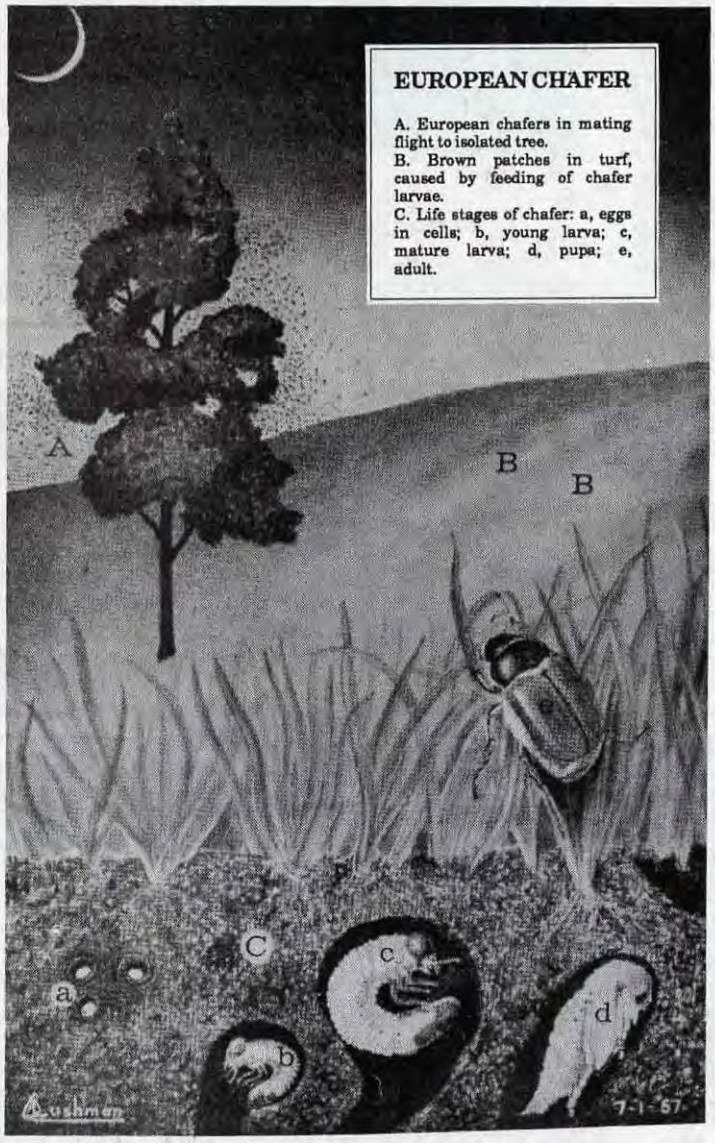
Most beekeepers sooner or later receive calls from people who are often nearly desperate, confronted with swarms of bees. Many beekeepers enjoy these opportunities to collect a colony of honey bees. In addition, it is an important service a beekeeper can provide the community, and affords a chance to educate the public about bees.

At Dyce Laboratory for Honey Bee Studies in Ithaca, New York, we receive many such phone calls throughout the spring and summer. The calls are often referred to the laboratory from the police and fire departments and from the Cooperative Extension Service. Beekeepers eager to collect swarms increase their opportunities by notifying these agencies of their interest. These calls have been important to our laboratory's research into the seasonal cycle of swarming in honey bees, and their nesting biology. However, not all of these calls concern an actual or collectible swarm of honey bees. Many are too high to reach, many are colonies of honey bees which are inhabiting the side of a building, and many are not honey bees at all.

In Ithaca, honey bees swarm from mid-May through mid-September with peaks in the first 2 weeks in June and then later during the last week of August and the first week of September (Fell et al., 1977). During this period we often remove honey bee swarms from bushes, trees, window sills and even parking meters. Later in the summer and fall, as populations rapidly increase, we are often called upon to remove large nests of wasps (bald-faced hornets or yellow jackets) from high up in trees, in garages and barns, and from between the walls of houses.



EUROPEAN CHAFER

A. European chafers in mating flight to isolated tree.
B. Brown patches in turf, caused by feeding of chafer larvae.
C. Life stages of chafer: a, eggs in cells; b, young larva; c, mature larva; d, pupa; e, adult.

We have learned to ask carefully about the details of "swarm calls" to determine what we are really dealing with. Is the bee "swarm" in fact a papery football-shaped nest? Are the "bees" coming and going from a hole in the ground, or from the side of a building? How high off the ground are they? Even so, we occasionally get an educational surprise, as in the case of a flurry of calls we received last June.

Nearly every evening for a week, at about 9 p.m. as the sun was setting the laboratory received calls from individuals explaining that a "swarm" of bees had suddenly appeared on their lawn, hovering over a small tree or bush. Upon further questioning, those people who had dared to venture close explained that thousands of brown bees were hovering and buzzing about. They had suddenly appeared over the course of an hour.

Although the descriptions sounded reasonably accurate, it was difficult to believe that honey bees were swarming at this time of day. Nearly all honey bee swarming occurs between 9 a.m. and 5 p.m. Nonetheless, we assured callers that there was no danger and that the bees could be collected in the morning when there was more light. By morning, however, the "bees" were gone. With our curiosity aroused, we decided to investigate the next call immediately, in the evening.

What we found was a swarm indeed, a swarm of scarab beetles

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CHAFER . . . Cont. from Page 413

that looked like small June bugs, about half an inch long, light brown, roughly the size and coloration of a honey bee. They were European chafers *(Amphimallon majalis)*. These insects are pests of lawns and pastures; the larvae or grubs feed on

the roots of plants. This chafer was first discovered in the United States in Wayne County, New York, in 1940, probably having entered the country from Europe about 10 years earlier. By 1959 it was in 10 counties of upstate New York and in the New York Harbor area, including most of Brooklyn (USDA, 1962). The insect later spread to isolated areas of Connecticut, Massachusetts, New Jersey, Ohio, Pennsylvania and Ontario, Canada (Tashiro et al., 1969).

The adult beetles emerge from the ground during June and July at about 8:30 p.m. (Eastern Daylight Time) just as the sun is setting. They swarm like bees around trees, shrubs or any tall object. After flying for

about half an hour, they settle on the foliage to mate. When heavy populations of the beetles congregate the beating of their wings produces a buzzing sound which can easily be confused with bees. Indeed, the sound frequency they produce is about 200 Hz, similar to the flight sounds of honey bees (180-250 Hz) (Morse and Hooper, 1985). Although emerging beetles number only in the hundreds, many fewer than the twelve thousand honey bees found in an average swarm (Fell et al., 1977), it is not surprising that these beetle congregations are occasionally mistaken for honey bee swarms. The adult beetles, however, are entirely harmless. They hardly feed, and do not bite or sting.

After mating, they return to the soil during the night and early morning. They make an average of 5 mating flights in their brief adult lives of a week or two, and usually die on the surface of the soil after their final flight (Tashiro et al., 1969).

So, if you should receive an unusual phone call one summer evening explaining that the bees are swarming, don't be too surprised. Though it is unlikely to be honey bees, you may be interested in witnessing the unusual mating behavior of another insect, the European Chafer.

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HOME HARMONY

By ANN HARMAN • 6511 Griffith Rd. • Laytonsville, MD 20879

Freshly-picked, home-grown tomatoes are such a universal favorite that I have seen them grown in rose beds, tucked between the perennials, and sharing some space with the shrubbery. The first tomatoes harvested seem to be eaten up on the spot, never making it into the house. After the first few weeks of gluttony we then turn to freezing and canning the ever-expanding crop. Perhaps you would like to try this recipe for catsup.

HONEY TOMATO CATSUP

1-1/2 teaspoon whole cloves
1-1/2 teasp. broken stick cinnamon
1 teaspoon celery seed
1 cup white vinegar
8 pounds ripe tomatoes (about 25 medium tomatoes)
1 tablespoon chpd onion
1/4 teaspoon red pepper
1 cup honey
4 teaspoons salt

Combine spices and vinegar in small saucepan. Cover and heat to a boil. Remove from heat and let stand. Wash tomatoes. Put in large pan and mash. Add onion and red pepper. Heat to a boil, then lower heat and cook 15 minutes stirring occasionally. Put through food mill. Return pulp to pan and add honey. Heat to boil, Then simmer briskly until quantity is reduced to half. Strain spiced vinegar into tomato mixture, discarding the spices. Add salt. Adjust any seasoning you wish. Then simmer until the consistency you like. Stir often. Then either freeze or seal in jars. Makes 2 pints.

Maryland Honey Cookery Show

July days are hot! Here is a recipe for an icy-cold accompaniment to meats, poultry or fish. It is really quickly made.

TOMATO FRAPPE

2 cups chopped tomatoes
6 peppercorns
1 bay leaf
2 whole cloves
2 tablespoons flavorful honey
1 teaspoon salt
1 lemon slice

Combine all ingredients in a saucepan and simmer 15 minutes. Put through a food mill to remove spices and tomato skins and seeds. Pour mixture into a freezer tray. Freeze partially, about 20 minutes. Then stir well with a spoon. Freeze another 20 minutes, then stir again. Freeze until firm. Serve in sherbet glasses. Serves 4.

Tomatoes
by Margaret Gin

The season for home-grown tomatoes extends into other fruit harvest. The tangy chutney made in late summer will be thoroughly enjoyed in the late winter.

TOMATO CHUTNEY

16 large ripe tomatoes
3 large apples
3 large pears
3 large peaches
2 onions, chopped
1 cup apple cider vinegar
1-1/2 cups honey
1 tablespoon salt
1/2 cup mixed pickling spices

Plunge tomatoes, apples, pears and peaches into boiling water, then immerse in cold water. Core and peel, then chop fine. Mix all ingredients together and boil until thickness desired. Freeze or can. Makes 6 pints.

Putting It Up with Honey
by Susan Geiskopf

Summer fruits are beginning to make their appearance. Since a fruit salad is refreshing, here is a suitable dressing.

Summer Vegetables

Summer Fruit

APRICOT HONEY DRESSING

1 pound can apricots, drained
1/4 fresh lemon, seeded, peeled
1 thin strip lemon rind (about 1" x 2")
1/4 cup honey
dash salt
1 cup dairy sour cream

Put drained apricots, lemon and rind into blender. Process until apricots are smooth. Add honey, salt and sour cream. Process only until well mixed. Serve with any fruit salad. Keep any leftover dressing in the refrigerator. Makes about 2 cups.

Joy with Honey
by Doris Mech

Cajun cooking is America's latest popular style of cooking. Honey gives a nice balance to those hot, spicy recipes. You can make this salad dressing ahead of time since it keeps well in the refrigerator.

HONEY SALAD DRESSING

This is a two-step recipe. First you will make the vinegar, then combine the seasoned vinegar with the rest of the dressing the next day.

Hot Pepper Vinegar
1 cup + 2 tablespoons water
6 tablespoons white vinegar
1/4 teaspoon cayenne pepper
1/8 teaspoon salt
4 jalapeno peppers, quartered

Combine all but peppers in a saucepan. Bring to a boil, add peppers and remove from heat. Cool. Refrigerate overnight in a covered jar. Strain before combining with rest of ingredients. Makes 1-1/2 cups.

Dressing
1-1/4 cups chpd pecans, dry roasted
1 cup honey
1/2 cup toasted sesame seeds
1/2 cup chopped onions
1 egg

Combine in a blender and process until smooth. If mixture is too thick, add some of the vinegar while blending. Combine the vinegar with the pecan-honey mixture and stir until well-blended. Refrigerate. Makes 3-1/2 cups.

Paul Prudhomme's Louisiana Kitchen
by Paul Prudhomme

Yes, this Cajun salad dressing would be excellent on a salad made from freshly picked tomatoes. Enjoy your garden fruit and vegetables.

PLASTIC FOUNDATION A Comparative Study

A Look at Perma-Comb, Pierco and Duraglit

By J. V. HIATT • P. O. 7475 • Long Beach, CA 90807

Summary

As a rule, *Bee Culture,* does not publish Research Articles. Usually they are extremely subject specific and not directly applicable to beekeepers. However, 'Plastic Foundation' studies a subject of particular concern to beekeepers at all levels. The information is presented simply and the overall results are fairly obvious.

This is not a research article you will find in Bee World or the other professional journals. Though it lacks hard statistics to back up its findings, it offers practical information useful to anyone considering plastic equipment of this type.

The plastic age is upon us. Unfortunately, there is little information regarding acceptance and honey production of the different types of plastic foundation available on the market. The purpose of this test is to determine the acceptance by *Apis mellifera* of plastic foundation, and resultant production.

Two tests were simultaneously conducted. One harvested only frames fully capped. The second harvested frames which were full, but not totally capped. The amount of wax used to draw foundations was taken into consideration, along with the amount needed to be replaced from cut combs.

Materials and Methods

Frames

Six inch frames were used throughout the study. The Perma-Comb and Pierco foundation had self-contained frames, eliminating the need to mount into wooden frames. Duraglit must be mounted in either wood or Snap-lock frames. I chose to mount the Duraglit in wooden frames. The bottom, sides and top were hot waxed to insure a snug fit.

Hives and bees

A total of twelve hives were used, six in the first and six in the second test. Each hive was supplied for honey extraction with two six inch supers containing ten frames apiece.

The brood super was stocked with standard nine inch drawn wax frames. A five pound package of bees, with a new queen, was placed in each hive during March, 1986. This enabled the bees to build up a large working force before the test began. Prior to the beginning of the test the hives were balanced by switching brood from strong to weak hives.

Location and honey flow

The hives were placed in a circle to reduce drift. Also, mounted on the front of each hive was a different wooden symbol painted a variant color or pattern to further reduce drifting. A solid inner cover of quarter inch acrylic was placed on each hive. The purpose was to have hive inspection without disturbing the bees or releasing heat, making it easier to determine when the honey should be pulled. All hives were placed in direct sunlight with no shade. General location was in an area in southern California where a year round, consistent honey flow supplied the necessary nectar and pollen. The average of this location is about 300 pounds per hive per year. The flow of honey is nearly constant.

Period and length of test

The test was conducted from June 1, 1986 and terminated September 30, 1986.

Dehydrating the honey on the second test

When a super was determined to be full of honey it was pulled and placed in a dehydrating unit. The dehydrating unit was a wooden framed structure placed in a small room where warm air blew through the supers until the water content was acceptable. This was determined by a honey moisture tester from AMVROSIUS.

Honey weight

All honey was accurately weighed on a calibrated grocery scale. The pulled honey was stored in separate plastic containers until the test was finished. The honey was again weighed to correlate with the final figures to reduce error.

Wax weight

The first drawn wax weight was determined by *The ABC and XYZ of Bee Culture* by The A. I. Root Company, 1980. Cut wax was weighed on an OHAS Gram scale. The wax was also kept in separate containers and reweighed at the end of the study.

Extracting was completed on a Maxant hand crank reversible two frame extractor.

Results

The greatest amount of honey was pulled from the hives containing the Perma-Comb. Honey from the hives equipped with Duraglit and Pierco combs were almost identical (See chart).

Discussion of Problems and Advantages

Perma-Comb

The bees did not accept the combs as quickly as the Pierco or Duraglit Foundation. It was about a week before the bees started to work the combs. However, after first acceptance the bees readily worked without hesitation.

The spacers sometimes dropped off. This was corrected by gluing

Continued on Next Page

Total Honey Production from June 1, 1986 to September 30, 1986 (Results of 2 tests)

Perma-Comb		Pierco		Duraglit	
672 lbs.		565 lbs.		568 lbs.	
Wax					
58g	62g	1097g	934g	908g	935g
Dehydration Test					
67g	71g	1205g	1178g	1232g	1197g
Wax drawn out					
0	0	*12 lb.	12 lb.	*12 lb.	12 lb.

*Approximately

Conclusion

I was able to pull the Perma Comb faster because the bees filled the frames rather than taking time and honey in drawing the wax. All frames except those involved in the Dehydration Test were immediately extracted and replaced on the same hives within two hours.

Perma Comb, even with it's higher primary cost, proved to be the best value of the three in respect to honey production and conservation of wax. The frames paid their way by the end of the test with the excess honey produced. No further maintenance would be required for their use in honey production. Another plus I found was that after the test I had left two Perma-Comb supers outside. Wax moth larva cleaned combs and cells of wax remnants. I rinsed the frames with water and shook the moth larva out with absolutely no destruction to the cells or frames.§

PLASTIC... Cont. from Page 417

with a hot glue gun. It would be better if permanent spacers were built in. They were by far the easiest to work with. Far less work was required to brush bees from the ready made drawn comb.

Wax for redrawing the foundation was not needed. Wax was only used in the capping of the cells. The foundation could not be crushed in normal handling.

Honey was extracted faster because full speed could be applied without regard for the fullness of the comb. The combs were the heaviest when empty, but when filled were about the same weight as the other two foundations.

Pierco

The frame is very light-weight. Pre-waxed, the bees accepted the foundation without hesitation, drawing the comb in eleven days. The foundation sometimes tended to warp to one side, giving a very deep draw on one side and very shallow on the other. Burr comb was occasionally constructed in the corners making it difficult to remove the bees by brushing. Portions of the comb (not the foundation) cracked when spun too fast in the extractor. Care was taken to insure a slow start, yet this problem still occurred.

Duraglit

Bordered in wood, they were more rigid than Pierco but even so a portion of cells occasionally fell out. This happened when the foundation was laid on the side prior to cutting. Burr comb was not as prevalent in the corners due to the pre-cut passage holes, yet a small amount did occur. The cells sometimes cracked and released themselves from the foundation while in the extractor, similar to the Pierco comb.

Hint of the Month

Canning of all foods is an exacting process, and well it should be. The method of processing, including processing time, is very important for safe storage of fruits and vegetables. A good, general cookbook usually gives instructions for canning. One of the canning jar manufacturers publishes a small book on canning techniques. This particular book is excellent — inexpensive but worth its weight in gold. I recommend it to everyone. The book is *The Ball Blue Book* and can be ordered from Ball Corporation, Muncie, Indiana 47302. Inquire for latest price and postage.

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The Honey Flow

By STEVE TABER of Honey Bee Genetics • P. O. Box 1672 • Vacaville, CA 95688

"To get a maximum crop, you have to have a maximum bee population during the ENTIRE honey flow"

What a wonderful time of the year. You only get a honey flow when everything is perfect with the weather, plant conditions and a certain quantity of plants attractive to bees. When the honey flow starts the bees go crazy, literally. Most of the things that bees do during the rest of the year they modify greatly during that mad time of the year — *The Honey Flow.*

Most of the year during the warm months, longer in the South than in the North, bees make a bare living, sometimes not even that. During cold winter months no flowers bloom, or if they do, bees can't visit them easily so they consume more each day than they can collect. If you have them on scales you will notice a gradual loss each day increasing in late winter and early spring.

But for 2 to 6 months in most places that bees are kept, they collect an enormous amount of nectar, its called *The Honey Flow* and it is what makes beekeeping a success or failure. The bees not only collect what they will need to survive the rest of the year, but they also collect surplus they don't need, what the beekeeper removes to eat or sell.

When I was working at the bee laboratory in Madison, Wisconsin with Dr. C. L. Farrar, the honey flow usually started about the 10th or so of June and would continue for about 4 to 6 weeks. We would have daily weight gains (occasionally) of 30 pounds per day. When I was working at the bee laboratory in Baton Rouge, LA the honey flow started about April 15th and finished about the 15th of June. During that time I registered weight gains of from 10 to 20 pounds each day.

In those days I was trying very hard to be a bee scientist, or apiculturist if you will, and I had plans and designs on the bees to do certain things, like raise queens, rear brood, train bees to forage at a dish of sugar water, collect artificial pollen and so on. Well, I tell you, when the bees get into a honey flow, forget science and forget the government approved projects — the bees no longer cooperate. All they want to do is collect nectar and make it into honey.

Under many circumstances beekeepers are trying to raise queens by grafting, and they think, wow!, there is a honey flow on, everything will now be easy because I won't have to feed my bees. ***Wrong!*** Bees will build burr comb all around your cells and you will have difficulty finding good queen cells. If you still have to raise queens during the honey flow, move the colony 10 to 20 feet, and place a dummy hive, with a frame of brood at the old location to catch the flying honey-producing bees. Now that the colony which you moved is no longer producing honey it will build you good queen cells.

The reason that most people who are beekeepers are beekeepers is because of the honey flow period. By definition the weather is always beautiful and the bees are perfect, even mean bees rarely sting during the honey flow. The beekeeper gets out there with the bees, adds supers, scrapes wet burr comb, gets honey all over clothes and tools, sits down in the family car getting honey everywhere, comes home, enters the house with a silly grin announcing to all what a great day it is and gets everything in the house stuck up with honey — DIVORCE.

Why are people beekeepers?

Why do people want to be beekeepers? It's because of the excitement of the honey flow. And then you begin to hope that it will end, especially when it goes on and on and on. I remember visiting a really good beekeeper when I was in Iowa during 1945. He kept bees near Pella, Iowa. That was an exceptionally good year for a honey flow. He told me, "Steve, people ask me what the bees are making honey from, and I tell them its clover, or alfalfa or whatever. But Steve, every now and then you have a year like this one and it is impossible to tell. So I tell them the bees make honey from fence posts."

To produce really large crops of honey during the honey flow, such as 300 to 400 pounds of removed surplus honey, you can not depend on nature ever arranging everything

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perfectly just for you and the bees. ***YOU HAVE TO BE A BEEKEEPER.*** You have to manage them, you have to provide for them at exactly the right time, you have to help them when they need it and ***YOU HAVE TO BE A BEEKEEPER.***

First, you have to have a disease free colony and develop the maximum population timed to occur at the beginning of the honey flow. As soon as the honey flow starts, and especially if its heavy, say 10 pounds gain per day, the bees put so much new nectar in the brood nest that egg laying by the queen is usually reduced. The reduction in egg laying at the beginning of the honey flow will effect the honey flow in its later stages if it lasts 4 weeks or longer because it reduces the population. Hive manipulations should be made that will be conducive for the bees to get honey and nectar *out* of the brood nest so the queen will continue to lay many eggs daily. Rotation of brood nest supers usually accomplishes this quickly.

Understand Population Build-Up

Population build up has to be thoroughly understood. To get a maximum crop you have to have a maximum bee population in the hive during the entire period of the honey flow, not just part of it. Let's take a for instance. Suppose the honey flow starts July 1 and lasts for 4 weeks and you started the season with a 3 lb. package installed on April 15th. The bees are fed properly and develop as fast as possible, how fast is that? Well, the population actually declines for the first 4 weeks so that it will be about the 15th or 20th of May before you have again 3 lbs. of bees in your hive.

We know from experience that it takes from 11 to 12 weeks for a new package to build up a maximum population that can really make a crop during a honey flow. So the installed package will hopefully make enough honey during the honey flow period during July that will enable it to survive the coming winter.

As a beekeeper, new or just beginning, can you do anything about this to hurry it all up? Even just a bit? Yes, there's lots you can do. *I use the word* ***"cheat"****,* I say *cheat* every chance you get. Establishing new units with swarms or with packages to produce honey is really very difficult, so I think you should give the newly

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established bees every break, all the help you can give them.

If you catch swarms, combine several into one unit. The bees can be united using a newspaper to separate the two units, spraying sugar syrup over all the bees. I have combined as many as three swarms this way and gotten a superb colony and honey crop.

If you are buying packages and can get frames of brood to install the package on, it will put your bees at least 2 weeks ahead. If you can't do that, add another pound of bees from the same shipper in 2 weeks from installation and then watch them jump.

For over-wintered colonies it's a different story. Figure on almost 2 months development of the colony before the honey flow. If your honey flow starts June 10, then April 10 is your guideline for colony development. Always assume the worst, in early April it will be the weather, so feed the bees a pollen protein mixture with sugar. The bees won't make any feed during April or early May so assume you have to feed them sugar at that time to prevent starvation.

Remember, during the honey flow the bees are driving the queen down from the brood nest by putting new nectar at the top of the brood nest and in the honey supers above the brood nest. This crowds the queen, preventing her from her full potential of laying eggs. This can be prevented by reversing brood nest boxes, and should be done if you have a long honey flow. On the other hand if you have a short honey flow it's fine to reduce the egg laying of the queen.

It comes back to what I usually say, don't be automatic with your bees. Think about what you are doing and why you are doing each manipulation before you do it. And — good luck with your honey harvest. But a word of caution, don't be greedy — leave enough for the bees.§

DIVERSIFY TO DRAW IN MORE CUSTOMERS

By RICHARD T. EDWARDS • 1233 Laurel St. • Westlake, LA 70669

There has been a lot of talk recently in the trade publications regarding diversification. The objective is to tell those reading these publications that you should not put all your eggs in one basket.

Well, you are a beekeeper. How can you cash in on this diversification thing? What is it as it pertains to you? Why should you diversify?

Let's take the last one first. You should or should not diversify based upon your belief of being a business person. You may be happy with what you are doing. You may not want to diversify. You may not wish to take on the additional responsibilities nor have the time to do so.

These areas will dictate to you whether or not you want to diversify. But, if you are still reading this article, you may wish to consider what diversification can do for your beekeeping business.

First of all, suppose you want to see higher yields from your beekeeping investment. Suppose, too, you want to make your business part of one or more sideline businesses all of which are in harmony with your beekeeping business.

Suppose, too, you would like to be in business on a full time basis. The point to all of this is you want to establish new, more improved goals for your business lifestyle. You also want to see a better return from your invested time.

All of these are very good reasons why you should diversify. And if you are interested in finding out how you can diversify your business, please read on.

First, in order for you to establish how you want to diversify, you have to take a look at your established business and determine from it what kind, or the amount of hours, you can devote to your diversified or sideline business ventures.

Second, you have to determine whether or not you intend to stay with the beekeeping business forms of diversification, or whether or not you intend to find other sideline businesses which enhance your beekeeping business.

Third, you have to establish reasonable goals and/or objectives which will work with your beekeeping business. By this is meant, you don't say, "Well I am going to be a millionaire by this fall because I decided to sell watermelons or pumpkins to lure in new consumers". Nor do you say, "well, I'm going to go out and plant five hundred watermelons and pumpkins this year and sell all of them".

Being realistic about your potential growth is one of the most important steps you can take towards diversification.

What is diversification? Well, it is the combination of products and services which will boost the business during down time, increase business during those peak demand times and produce a steady flow of income whether you are selling honey or not.

Diversification, if done properly, will take you from a part time business person to a full time business person. And it will *increase* sales of honey and by-products at the same time.

Now that diversification has been defined, let's take a look at some of the ways you can diversify your honey business.

Producing Higher Yields

It is possible that you could produce higher yields than what you are producing currently. There are a couple of ways to do this. First, you can increase the hives you currently have. This will require more of your time, right?

Well, not exactly. It would if you are the only one doing the work.

You could rent hives out to local boy scouts or others who would maintain them, help you extract the honey and share in the profits when the products are sold.

You could lease some of your hives, allowing the consumer to care for them and work up an agreement that whatever honey which can't be used by the consumer is bought by you at a pre-determined price.

This involves, of course, training these individuals. Since your time is not free, you could also conduct courses dealing with beekeeping and the production of honey and by-products.

Another way to increase honey yields is to make contact with local farmers, see if they wouldn't mind having hives placed near their crops during times of pollination.

You get paid for the pollination of the crops, you increase your hives and increase honey production at the same time (if you're lucky!).

Increasing Consumer Interests

You can increase consumer interests in your beekeeping pursuits through on-site education programs. You may have a grade school come out to your place and show them a day in the life of a beekeeper.

You may also give conducted tours for children and adults.

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Showing them how a beekeeper maintains hives, extracts honey and so forth and so on.

You may also offer free samples to the children and adults. Hershey did this back in the 50's and it helped them to be one of the biggest producers of candy in the world.

You may also want to emphasize that all "sugars" are not the same. Show both children and adults the differences.

You could educate the consumer while you are giving away those free samples on the differences between commercial processed honey and independently produced honey. Mention the differences, and even have them taste the difference.

Luring Consumers with Diversified Offerings

Where is honey offered at the grocery store?

It is generally right near the peanut butter and jelly. So why not sell natural peanut butter and home made jellies. These are just two harmonizing commodities you can offer.

You can also sell: natural vitamins, real health foods, candles, wax, bulk grains, flour and rice — all in harmony with your honey business.

The idea is that you are offering the consumer a one-stop natural foods source. Kind of like an old time general food store before all the additives made most foods unfit to eat.

You can also sell items that are popular during their growing season. You can either do some farming yourself, or you can find a couple of small farmers who go with organic farming as a lifestyle and help them sell their produce through your honey business.

Popular items such as those watermelons and pumpkins are only two of many items which you can either self-produce or offer to sell throughout the year.

You could also consider the possibility of reversing this. You offer your honey and other products to those farmers selling their organically grown products in harmony with their selling endeavors and diversify by extending your honey and product sales through them.

Using a private label — **YOURS** — along with a strip map on how the consumer can find your location when they want more honey is a way to extend your business through the small farmer and their farm business.

You may want to use a hobby or craft to entice consumers to your business. Wooden projects, candles, hand crafted pottery and the like are just some of the many examples which can be used to diversify your honey business while, at the same time, enticing consumers.

These are some of the many ways you can diversify your business. None require a lot of money to get started and all have their special merit. But you will never know which one will work best for you until you give one or two a try and see.

However, you *will* discover that diversifying will work to sell your honey and other bee products.§

THE POLLEN-TRAP BOOBY TRAP

By J. IANNUZZI • R.D. 4 • Ellicott City, MD 21043

Introduction

As every *au-courant* beekeeper knows, a pollen trap is a device placed somewhere on the beehive to remove the protein pellets from the honey bee as she enters her domicile. A movable tray collects the catch. Most traps are theoretically designed so as to prevent the collection, according to one's desires (commonly called "free-flight").

Free-Flight

With the equipment in the free-flight configuration, no pollen is being trapped since the lively little ladies are not passing through any stripping device (like a five-mesh screen or a plate punched with 5/16-inch holes). This operation is achieved in several ways: one trap offers a swivel, the width of the hive front, to open or close an aperture above the pollen-stripping screen; another permits one to raise or lower a perforated vertical plate or vertical screen, permitting free passage without the loss of pellets; a third provides for an opening above the pollen-removal screen — when unblocked with a piece of wood, free-flight is achieved; and a fourth permits complete removal of the pollen-trapping screen from the hive to prevent collection. All these actions occur without hive disassembly.

Free-Flight Principle

The idea of turning a trap on or off sounds great, but does it work? Is it that simple? Therein lies the booby trap. I've been reading all three monthly apian publications regularly since at least 1980. I have NEVER seen this serious problem discussed. The Eastern Apicultural Society (EAS) had an excellent speaker on pollen-trap design and use for two years running (1984 and 1985): he never discussed this crucial problem for the hobby beekeeper until I popped the question at one of his meetings. *For the hobby beekeeper wishing to invest in just one trap and hoping to turn it off and on at will, this is a critical question.*

Faulty Trap Design

There must be more than a dozen pollen traps on the market today (or were, when the above speaker was in operation). Since 1981, I have used six traps of different American manufacture. *Every one of them failed* the free-flight principle, save one[1]. By this I mean that over a period of time the free-flight device failed to operate because the bees had plastered it open or shut with propolis, depending upon its last use, and prevented further operation. If propolized open (free-flight), no pellets could henceforth be trapped — and could not be — unless the equipment was removed by breaking down the hive, restored to its original intended operation by scraping off the bee glue, and then returned to the hive. A grand nuisance!

A case in point. One year (1985) I was operating the swivel-stick design in free-flight mode — half of the wood protrudes from the front of the hive while the other part is concealed inside — not touching it for days on end. When I did attempt to move it, the inside end had been glued into position. Forcing caused the swivel to break in two; henceforth, I could never collect any pellets because the bees kept entering that opening *above* the pollen-stripping screen. Only after I used duct tape to seal that opening was I in business again. I have since concluded that any trap that has an *internal* free-flight control, in whole or in part, is *worthless for that purpose* because sooner or later those angelic agriculturists will plaster it into position, thus preventing its further use. For a free-flight control to be of any practical use, it must be fully *external*. (Notice that I keep mentioning "hobbyist". For the commercial collector who is only interested in trapping maximum pollen and doesn't wish to fool with turning his trap off and on, my comments are nugatory.)

A Simple and Easy Cure

The most facile solution that I know of is (1) to purchase a trap with an external control device which cannot be easily glued into position after extended use/disuse or (2) to convert one's purchase into such a mode. Any of the front-mounted traps[2] will meet the first condition (these are placed on the front edge of the bottom board, creating a new entrance into the hive, and can be removed at will *without* having to dismantle the colony); however, they suffer in design by having small collecting drawers; by being subject to rain penetration; and by having small entrances leading to heavy bee congestion in busy flight periods. The only bottom trap[3] (these are installed on top of the bottom board or replace it) that also meets the first condition — within my experience — is one made near Harrisburg, PA that has a push-in/pull-out piece of lumber at the trap front.

The other solution is to cut an opening — if there is not one already — above the pellet-removal screen and to close it with a piece of wood that swings from the vertical to the horizontal, measuring an inch and a half wide by 17" long. It is attached at one end by screw or nail and notched at the other end to mate with a protruding screw/nail, to permit easy lifting and replacement (see photos). This modification permits the "armed soldiers making boot upon summer's velvet buds" to enter and leave the "tent-royal of the emperess" without losing their locked-on load. This I

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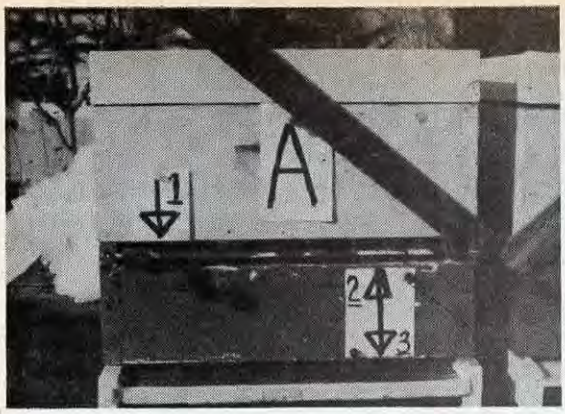
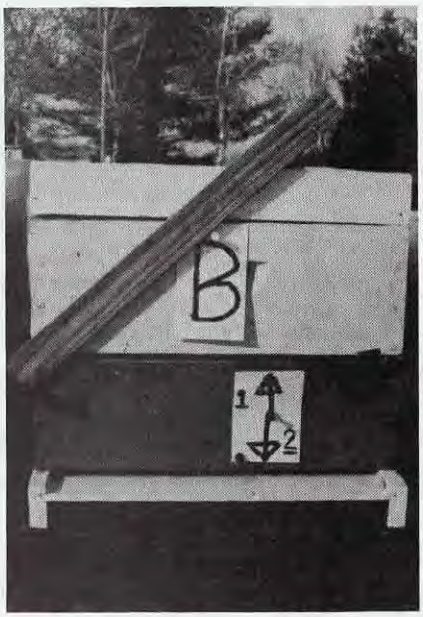
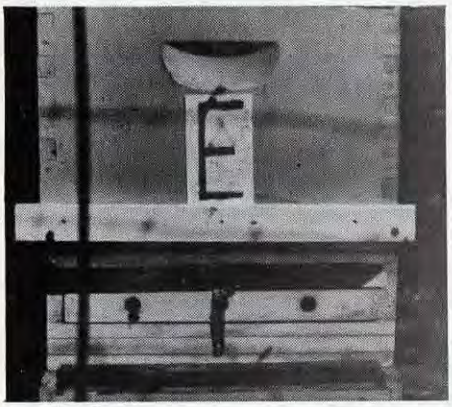


"A" hive has an early model CC Pollen trap on the bottom board. The pollen drawer used to be up front until multiple stinging forced me to redesign the equipment and put it in the rear. Opening #2 — where hive tool is — is original but I've increased it to full width of the hive by removing wood from both ends. Opening #1 I cut out myself to permit free-flight (in and out movement above the pollen-stripping screen — there is no loss of pollen to the human collector). Making the diagonal wood horizontal closes aperture #1 but not *opening #2 — this permits pollen stripping. With #1 left open, the bees have choice of three ports, but most choose to enter #1 — through which they do not lose their precious loads.*

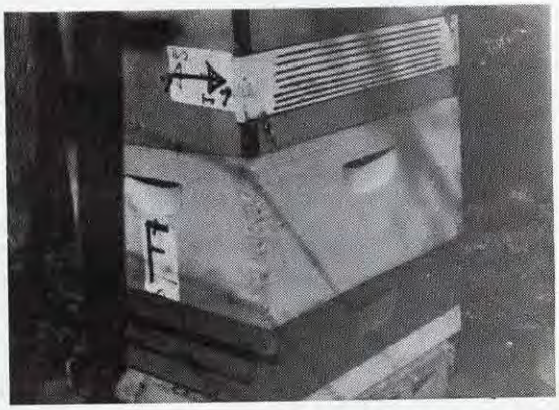
"A" hive by Stauffer is a redesign of "C". Entering 2 forces the bees through the pollen-stripping screen; entering 1 — after the wood with the "down" arrows is removed — permits the bees to enter the hive without losing their pollen. It is the only hive that I've seen with an external free-flight device — even so the bees will propolize it into position if left untouched for a long time. With a little struggle, it still can be removed. (The "down" arrows indicate the proper insertion of the strip.)

"B" colony has the early model Stauffer pollen trap. It was designed with no free-flight device (probably for commercial sales only where this mode is not necessary). I cut out opening #1 to permit free-flight (entering the trap without being robbed of the protein load). Normal entry for trapping is aperture #2. The latest design has a push-in piece of lumber to close #1 (where the hive tool is). I consider my modification of the old model superior because (a) it cannot be easily glued into position; (b) it can be operated from behind the hive — out of sight of the bees — since the swinging lumber is wider than the box; and (c) it can be done swiftly: a key consideration when handling these girls.

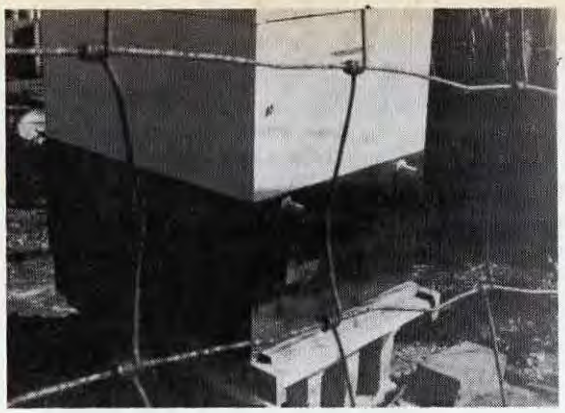




"E" hive by Draper is an OAC-type (Ontario Agricultural College where the design originated) hive with a removable pollen-stripping screen. Entering the opening just beneath the rain shield forces the bees through the pollen-striping screen. Removing the screen — hidden behind the white lumber strip — permits the bees to enter without losing their pellets. Since the bees propolize the screen into place, it can't be removed; hence, I removed the front frame of the screen, left the screen in place and closed off the new space with the white strip unless I want free-flight (no pollen is being collected) at which time I raise the white strip.



"F" hive by Johnson (the Guinness Beebeard King) had an internal free-flight device the bees insisted on propolizing into place so I cut an opening up the pollen-stripping screen and use the movable piece of lumber, just below the letter "F", for free-flight. Trap sold as the "Dr. J. Pollen Harvester." The super of this hive carries the Roland Bell Propolis Collector Board (indicated by arrow), the easiest way to collect clean bee glue.



■ *This hive — with the two drone-escape tubes protruding from the front — is the only one of my six bottom-mounted traps (these are placed above the bottom board) which does not carry my external free-flight device. This state is achieved by pulling out a metal bar — the hanging nail on the upper side of the trap just behind the vertical fence wire. It is a crude copy of the Veriti-Clean trap made by Cloverleaf which has a vertical punched-metal plate as the stripper: raising it permits free-flight. I strongly suspect that the bees also propolize that into position because it's an internal device.*

POLLEN-TRAP... Cont. from Page 425

have done to four pieces of equipment (CC Pollen, Arizona; James H. Johnson's, Terra Alta, W. VA; Stauffer #1, Port Treverton, PA; and Strauser's, Millertown, PA — on this last mentioned, I first removed the front frame from the screen to provide for the proper clearance, since the necessary opening already existed).

Concluding Word

A *hobbyist* thinking about purchasing just one hive and hoping to trap or not trap those protein pellets on any given day shouldn't stumble into the pollen-trap booby trap, as I innocently did, by taking for granted the manufacturer's claim about free-flight capabilities.§

References

[1]The original Stauffer trap — not the current model which has proper free-flight.

[2]Available from the A. I. Root Catalog, p. 20 ($28.25) or Dadant, p. 15 ($20.68).

[3]Procurable from Stauffer's Beehives, RD 1, Box 277-A, Port Treverton, PA. 17864 ($17.95). My favorite trap based upon cost, utility and free-flight.

A NOTICE TO OUR READERS ABOUT MAIL ORDER PURCHASES

When you have difficulty receiving service from an advertiser in our magazine it makes us look bad, and frankly, we don't enjoy being in that position. We make every effort to screen advertisers (short of checking the post office's Most Wanted List) and over the years, have had few complaints about them.

However, if you do have a problem, follow the 5 suggestions listed here. And, I might add one more. Drop us a short note explaining the situation so we can check these problems from our end. If we can't resolve the problem (and many times we can't), we *can* refuse to place the offending ad again. However, we need to know of the difficulty.

As stated above, we don't like placing deceptive ads, and won't if conditions warrant.

1. ***Never send cash.*** Always use a check, money order or credit card.

2. ***Keep a copy of all transactions,*** especially cancelled checks, money order receipts and correspondence. For phone orders, make a note of the order — including merchandise ordered, price, seller's name, address and telephone number, salesperson's name, order date and expected delivery date.

3. ***Understand the seller's return and refund policy,*** including the allowable return period and who pays the postage for returned merchandise.

4. ***If you should have a problem with your order or merchandise, write a letter to the seller*** with all of the pertinent information. Telephone complaints should be followed up with a letter of confirmation. Keep copies of all correspondence.

5. ***If you have thoroughly followed up in writing*** with the seller on your problem and still are not satisfied, contact the consumer protection agency in the seller's state or your local U.S. Postal Service.

INNER COVER... Cont. from Page 387

represented by Robins, Badgers, White-tailed Deer, Northern Pike — in my opinion perfectly respectable, productive animals.

Granted, butterflies don't sting, nor are people allergic to them, although some produce caterpillars with hairs that can cause allergic reactions to some people. The Monarch is pretty, I guess, and the cocoon (chrysalis) is remarkably striking. The larva, the familiar black and yellow striped caterpillar is eaten by few predators due to its diet, so contributes little to the food chain.

So the question arises — do we want to "Float like a butterfly" or "Sting like a bee"? (There, I've said it.) If you feel as I do, write your congressman and voice your support. You can bet the Entomological Society members are going to make a lot of noise, soon, in favor of their choice. If we start now, and really take a stand, you will be able to say that you are a protector of the National Insect and Mr. Mullinax can take a breather.

•

Dave Miksa called about 3 weeks ago asking for some information on the Sue Bee Honey I commented on in May. He wanted to know the batch number on the bottom of the container so they could find out the history of the stuff I tasted. They tracked it down, tasted some of the samples from the run and then got back to me.

They didn't argue with my opinion, but their sample seemed O.K. to them, and Dave seemed to think the difference was probably due to storage problems between the time it was packed and I tasted it. A fair guess, and probably correct.

But two larger issues arise now that need comment. The first is that *somebody* from Sue Bee was concerned enough to check out a reasonable consumer complaint. They went to a fair deal of trouble to find the source of my problem, and even the processing it went through, sampling and other checks. Although my taste buds still say the honey wasn't great, I am satisfied with the way my complaint was handled (although they didn't offer to replace it).

Good customer relations. The customer is *always* right. Smile! Those were the words my father drilled into me for 15 years when we were in the grocery store business. He never argued, he never questioned and he was never right when it came to a customer complaint. His only compensation was that he smiled every day on his way to the bank. That, and everybody in town respected him as a fair and honest businessman. Not a bad reputation to have.

The second issue is a bit less obvious. What do you do when you see *somebody else's* honey on a store shelf that has obviously gone "bad", crystalized, gotten dusty, maybe even fermented? Do you smile and think "Well, he won't sell *that* honey". Or, do you contact the manager and tell him/her that they have a flawed product on the shelf and they should remove/replace it?

Remember, it only takes one bad experience for a shopper never to buy honey again. If they have one good experience, the next bottle they buy may be yours. And, if the store manager isn't able to get satisfaction from the current supplier, they may buy from you next time.

But that "bad" jar probably won't sell, and *nobody* gains from that — Right?§

FOR THE RECORD...

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

H. J. RES. 171

IN THE HOUSE OF REPRESENTATIVES

March 4, 1987

JOINT RESOLUTION

Designating the honey bee as the national insect.

Whereas the honey bee has been recognized since biblical times as an embodiment of the virtues of industry, ingenuity, thrift, and selflessness, qualities that reflect some of the most basic and honored ideals of the Nation;

Whereas the honey bee is an unsung yet essential link in the chain of American agriculture, pollinating an estimated 19 billion dollars' worth of crops annually;

Whereas the honey bee population is declining under pressure from urbanization and the misuse of pesticides, resulting in a loss of honey and beeswax and in reduced yields of fruits, vegetables, flowers and shrubs because of inadequate pollination;

Whereas concern for the honey bee has created public awareness of the urgent need to preserve and protect these valuable creatures;

Whereas at the present time honey bees are kept in all 50 of the United States;

Whereas many communities across the Nation hold annual festivals of art, crafts and music in honor of the honey bee;

Whereas the Postal Service honored the honey bee by issuing an embossed envelope on October 10, 1980, in Paris, Illinois;

Whereas 16 states have already adopted the honey bee as their official state insect, and Utah is nicknamed the "Beehive State" in honor of the honey bee; and

Whereas it would be in the best interests of the people of the United States for the honey bee to be adopted as our national insect: Now, therefore, be it

Resolved by the Senate and House of Representatives of the United States of America in Congress assem-bled, That the insect commonly known as the honey bee is designated and adopted as the national insect of the United States, and the President is authorized and requested to declare such fact by proclamation.

KOOVER... Cont. from Page 393

brings it to the double depth of the Eastern floor board. They call it the deep side up. Now examine the pictures and you should have no trouble assembling it. Make it fit the entrance as tight as you can so it just barely slips in and out. The bees will make it bee-tight. Look at the pictures again. And if you have trouble don't be afraid to ask questions. The best part, you can glue the whole thing together with Weldwood carpenter's glue. You can find that in hardware stores.

It does not increase the weight of your hive. It's not hard on your pocket book, for beekeepers are poor these days. And if you are a real amateur it will give you something to experiment with, without annoying your bees.§

Answers to Testing Your Beekeeping Knowledge

1. ***True.*** Nectar is a sweet, aqueous liquid secreted by the nectaries of plants. It is composed primarily of sugars and water and upon collection by the honey bee is converted into honey.
2. ***False.*** Honey production is dependent upon colony strength, floral sources and local weather conditions. Colony management has less impact on honey production than local weather patterns.
3. ***False.*** Nectaries are the organs of plants which secrete nectar. When these specialized glands are located on parts of the plant other than the flower, they are known as extrafloral nectaries.
4. ***True.*** Foraging honey bees are capable of distinguishing between the various sugars found in nectar and differences in sugar concentration, thus honey bees select the floral sources that offer the most attractive sugars and offer the greatest caloric reward (highest sugar concentration).
5. ***True.*** Honey production per unit number of bees in the colony is considerably greater in stronger colonies than in smaller colonies, since proportionately fewer bees are engaged in brood rearing. The most populous colonies produce not only the most honey per colony but the most honey per bee.
6. ***False.*** A forager loaded with nectar enters the hive and moves to a place among other workers on the comb. If the nectar flow is weak she walks about until she meets a house bee to which she gives part of her load. Occasionally she gives her entire load to a single house bee, but more often it is distributed among three or more. If the nectar source is bountiful, the forager usually dances, then begins distributing her load to near-by house bees.
7. ***False.*** Atmospheric humidity does not affect nectar secretion directly, but has a pronounced inverse effect on nectar sugar concentration. As nectar is secreted, its concentration alters until its vapor pressure comes to equilibrium with that of the atmosphere. Unless the humidity of the atmosphere is very high, the result will be a loss of water molecules to the air and an increase in nectar sugar concentration. Evaporation is hastened by high temperature and rapid air movement across the nectaries.
8. B) Photosynthesis
9. A), C), D)
10. •Rain dilutes the nectar, making it unattractive to honey bees.
    •Rain washes the nectar from the flowers.
11. *Nectar dearth* — a time in which there is a lack of nectar producing plants in bloom within the foraging range of honey bee colonies. During this time colonies have a strong instinct for robbing.
    Honey bound — during a honey flow, colonies need more space initially for handling the incoming nectar than for storage of honey. Failure to provide adequate handling and storage space, results in the colony filling the brood nest with honey, thus restricting the queen's laying space. This condition is referred to as the colony being "honey bound".
12. Dandelion (*Taraxacum* spp) - (C)
    Corn (*Zea mays*) - (B)
    Maple (*Acer* spp) - (C)
    Golden Rod (*Solidago* spp) - (C)
    Sweet Clover (*Melilotus* spp) - (C)

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

Number of Points Correct
20-18 Excellent
17-15 Good
14-12 Fair

Correction:

We incorrectly labeled the answer to question #3 in the May issue. The correct answer is:

False. When burr comb is built between supers, it is an indication that bee space (1/4 - 3/8 inches) was not properly constructed. The gap between the top bars of the lower super and bottom bars of the upper super is graeter than 3/8 inches.

The answer to question #4 was ***True.***

News & Events

☆ FLASH ☆

Killer Bees Seized at Port are Destroyed

TALLAHASSEE — A small colony of killer bees that inadvertently was brought to Panama City aboard a Costa Rican ship has been destroyed by state inspectors, Agriculture Commissioner Doyle Conner has announced.

The colony was removed from the ship last month by a port employee who kept bees as a hobby. The employee took the colony to his property where it was recently confiscated and destroyed by a state apiary inspector. It was not clear whether the employee knew the insects were killer bees.

Connor said the Division of Plant Industry's Bureau of Apiary Inspection had collected samples of bees from other hives on the property. All samples collected so far have proven to be the common European honey bee.

Killer bees were accidentally released from a research laboratory in Brazil 20 years ago. The bees are extremely defensive and will sting people and animals when they attack in large numbers.

Scientists think interbreeding with more docile European bee populations in Mexico will slow the northward migration of the bees and alter their aggressive nature.

During the past year, Florida inspectors have been checking ports to prevent the bees from being brought into the state aboard foreign ships.

NOTE: This is the kind of press we ***DON'T*** need!

May Mishap

Police and firefighters had a sticky situation on their hands when a truck carrying 800 boxes of honey bees overturned on Interstate 75 near Cordela, GA, releasing about 40 million bees.

An overpass near where the accident occurred in mid-May was covered with bees, said Crisp County Fire Chief Guy Jones. "They were flying around the bridge and a lot of them were sitting on the bridge."

The unidentified truck driver was treated and released at a local hospital, and several officers were stung by bees, but there were no serious injuries, said Jones.

The truck was taking the bees from Florida to the Dakotas, where they were to be used to aid pollination of clover and wheat fields.

Authorities closed the interstate and squirted the bees with water throughout the night to halt their flight, said firefighter Ronnie Youngblood.

The bees that survived probably will die within six weeks and aren't thought to be a danger to motorists or nearby residents, authorities said.

☆ PEOPLE IN THE NEWS ☆

The National Honey Board

How many consumers use honey in baking? In salad dressings? In barbecue sauces?

Why do some areas of the country have higher honey consumption than others?

How many restaurants have honey on their tables? Why not more?

The National Honey Board has authorized consumer, retail and foodservice market research studies to answer these and other questions in order to determine the best avenues for honey promotion.

Three market research studies were unanimously recommended by the Board's Research, Advertising and Public Relations Guidelines Committee during its meeting in Seattle April 17, and were later approved in a mail ballot of the Board.

"We're not reinventing the wheel here. We all have assumptions about consumer attitudes and uses of honey but we need documented, researched facts," Bill Gamber, committee chairperson and vice president of Dutch Gold Honey in Lancaster, PA, said. "The results of these studies will help the Board to effectively allocate funds and to target promotional activities."

A consumer usage and attitudes study, to be conducted by Associated Marketing Inc., Chicago, will determine the demographics of honey consumers by region by sampling 5,000 consumers from across the country. The study will explore how, when and why honey is being used or not used by consumers. The study will also reveal consumer attitudes towards honey as compared with other sweeteners.

"The consumer study will serve as a foundation for our programs and in the future, will serve as a report card on the National Honey Board," Gamber said. "We can repeat this research study in a few years to measure the effectiveness of the Board's promotions on consumer attitudes."

A one month retail distribution study, to also be conducted by Associated Marketing, Inc., will determine the percentage of stores stocking honey, the percentage of stores with honey on sale, the condition of honey, shelf space and display material used. The research will illustrate the retail conditions experienced by the consumer when shopping for honey.

"This research will be unlimited in scope but will help to determine the current market conditions for honey," Gamber said.

A foodservice research study will be conducted by the Hale Group, Davers, MA, to discover the volume and penetration of honey in all segments of the foodservice industry including fast food, fine dining, catering and schools. The research will analyze how honey is presently used, the profitability of honey use and packaging problems and preferences.

"If we can get honey on the restaurant tables, we will start to see more honey on consumers' kitchen counters," Dan Hall, manager of the National Honey Board, said. "This study will help us evaluate the potential and problems of using honey in the foodservice and will help us to find solutions."

Continued on Next Page

The Board will also be evaluating a research study on the commercial/industrial use of honey which was recommended by the Research, Advertising and Public Relations Guidelines Committee. This study will evaluate and propose areas for honey product development.

"Other commodity boards strongly suggested that we look at research before jumping into any particular promotional campaign," Hall said. "The Board is committed to increasing the demand for honey. With the limited funds available for national promotion and advertising, the Board must spend its dollars prudently to get the maximum market results for each dollar spent. The consumer, retail and foodservice market research will help the Board to spend its entrusted dollars wisely."

Market research will help the National Honey Board to target its promotional work. During its recent meeting, the Board's Research, Advertising and Public Relations Guidelines Committee reviewed various research proposals. Pictured are (front row): Bill Gamber, Board member and committee chairperson; Dennis Palmer, Evans/Kraft Advertising and Public Relations Agency; Kimberly Buchanan, Board member; (second row): John Miller, Board alternate member; Dan Hall, Board manager; Mary Humann, Board public relations director, and Gary Evans, Board alternate member.

Missouri Beekeeper of the Year

The Eastern Missouri Beekeepers Association honored Mrs. Sandy Hensley as the Beekeeper of the Year

for 1986. Mrs. Hensley is a beekeeper of experience and a member of E.M.B.A. for over 10 years. During these years, Mrs. Hensley has performed many duties for the association, such as: co-ordinating calls for the swarm list for the St. Louis area, working on the newsletter for 20 hours each month, handling magazine subscriptions, collecting dues, and co-ordinating prizes for the picnic. Sandy also helps her husband with requeening, moving beehives, removing honey, and does most of the honey extracting. Mrs. Hensley was presented the award by Mr. William Garesche (left), Beekeeper of the Year for 1985. Sandy's husband, Larry, is on the right.

Local Bee Specialist Honored

DOYLESTOWN — At the joint meeting of the Bucks County and Montgomery County Beekeepers' Associations, held at Delaware Valley College in April, Dr. Robert Berthold was presented a special award for his years of service to the beekeeping community by the Montgomery County association.

Dr. Berthold, Associate Professor of Biology and the College's beekeeping specialist, was given a walnut, hand-crafted polarascope made by a local craftsman. The tool is used in judging honey. A polarascope reveals crystals and other contaminants not readily visible to the naked eye.

Dr. Berthold has been involved for many years in the judging of honey shows. Among those he has judged are the Bucks County, Montgomery County, New Jersey State, Pennsylvania State and Eastern Apicultural Society honey shows. In 1976, Berthold chaired the honey show for the American Beekeeping Federation when it held its annual meeting in Philadelphia in conjunction with the national Bicentennial celebration.

1987 California Honey Queen

Buzzing throughout the Golden

State as the 1987 California Honey Queen is Dorie Goit, this years representative of the California State Beekeepers association. Fairs, festivals, fitness shows and a brief segment on the Los Angeles talk show "What's Now" are just a sample of her promotional activities for the industry.

A native of the largest agricultural state in the nation, Dorie has also shared the wonders of bees and honey with over 3,000 school children. With an observation hive of live honey bees in tow, her school presentations allow children to marvel at the industrious little insect whose pollinating activity provides us with approximately one-third of our diet. Dorie, a student herself attends California State University, Northridge majoring in business.

Bees and honey have a long history in this twenty year old queen's life. As a youth she joked that while her classmates kept dogs and cats as pets, her family kept bees! Her parents, John and Dolly Goit, own and operate Goit's Honey Company in the Antelope Valley. Her father also serves as vice-president of the Los Angeles County Beekeepers Association.

☆ FOREIGN ☆

APIMONDIA

The 31st International Apicultural Congress will be held August 19-25, 1987 in Warsaw, Poland. The meetings will be held in Congress Hall in the Palace of Culture and Science. Available languages include English, French, Spanish, German, Russian and Polish.

A wide variety of subjects will be

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covered during this convention including: Beekeeping Economics, Honey Bee Biology, Pathology, Honey Plants and Pollination, Technology and Equipment, Apitherapy and Beekeeping in Developing Countries.

Many sightseeing opportunities exist in the area surrounding Warsaw and participants are encouraged to partake of as many as possible.

For registration or other information contact: National Tourist Enterprise "Orbis", Congress Boulevard, P. O. Box 146, 00-950 Warsaw, Poland.

☆ ALABAMA ☆

The annual meeting of the **Alabama Beekeepers Association** will be held on August 7-8 in Birmingham at the Hotel Sheraton Perimeter Park South at the intersection of highways I-459 and US 280.

A good program with outstanding speakers is being lined up, including coffee breaks, noon lunch, prime rib banquet and door prizes. Business meeting on Saturday morning.

If you need hotel accommodations, you should write or call the hotel at (205) 967-2700 and identify yourself as an Alabama Beekeeper for special rates on excellent accommodations.

Pre-registration by July 22 will be $32.00 per person. After that date it will be $35.00 to cover the above expenses. Make check to Jefferson County Beekeepers Association and mail to Mr. Robert M. Simpson, 3312 Stoneridge Dr., Mountain Brook, AL 35223. (205) 251-5225 office or 967-5081 home.

Space is available for exhibitors at a very modest cost.

☆ CALIFORNIA ☆

A two day short course on queen rearing will be sponsored by **Honey Bee Genetics** on July 11 and 12, 1987. The course will cover theories and practise of queen rearing. Participants will make their own grafting needles and will graft larvae into wax cups of their own making. Several different queen rearing techniques will be demonstrated. Registration fee is $50.00 which will cover 6 meals. Advance registration is necessary as the class is to be limited to 30 participants.

Instructors will be Steve Taber and Tom Parisian, both having a great deal of experience in queen rearing on both a practical commercial and theoretical university level.

For registration contact: Steve Taber, P. O. Box 1672, Vacaville, CA 95696, (707) 449-0440.

•

A short course in Artificial Insemination (AI) of queen honey bees will be held for 2 and a half days in July sponsored by **Honey Bee Genetics**. The course will begin in the afternoon of the Friday, the 17th and continue through the 19th. The course will cover use and practise of AI using the Mackensen device, the collection of drone semen, and insertion into the queen using both plastic and glass tips. Lectures during the evenings will cover basic genetics and different methods of bee breeding techniques which have been developed. The course will be on the premises of Honey Bee Genetics in Vacaville, located about half way between San Francisco and Sacramento, each about an hour away. Instructors will be Steve Taber with over 40 years of experience using AI and T. Parisian former graduate student in bee biology Univ. of Cal. at Davis now a commercial beekeeper. The cost will be $200 which includes all required supplies and meals. Since the size of the class is limited, an early registration is suggested.

With the predicted invasion of the Africanized honey bee from Mexico in the next several years, the use of AI to keep our bee stocks pure and to maintain closed populations will be essential. For class registration contact: Steve Taber, Honey Bee Genetics, P. O. Box 1672, Vacaville, CA 95696, (707) 449-0440.

Plan your vacation early to take advantage of this educational benefit to your professional beekeeping. The cost of meals will be $50 for any family member accompanying a course participant.

☆ CONNECTICUT ☆

Connecticut Beekeepers Assn. to observe Bee Forage Trials in Goshen on June 27

The Connecticut Beekeepers Association will conduct its annual field day on June 27 at the site of the on-going bee forage trials conducted by CBA President Mr. Chuck Howe. The meeting will be held in Goshen Connecticut.

The program will begin at 10 am with the business meeting at the Congregational Church located at the intersection of Connecticut Routes 63 and 4 in North-Western Connecticut. At 11 am the main speaker will discuss NECTAR AND HONEY FLOWS IN CONNECTICUT. At noon, the traditional carry-in pot luck dinner will be offered.

At 1 pm, Mr. Howe will lead the group to the demonstration plots located in Goshen. There he will show the multi-year program designed to determine the best nectar-producing plants for the region, with hopes of obtaining increased honey production on a fixed-land secretion operation.

Opportunities will exist to obtain cuttings, seeds and other vegetative forms of the plants for use by cooperating beekeepers.

All beekeepers are invited to participate in this meeting. There is no registration charge.

The Connecticut Beekeepers Association is one of the country's oldest beekeeping organizations, founded in 1891. Membership includes four meetings each year (4th Saturday's of February, April, June and October, as well as 4 issues of *THE CONNECTICUT HONEY BEE* edited by Dr. Larry Connor. This quarterly journal has been in continuous publication since 1929. Membership dues are $10/year. Out-of-state beekeepers are invited to join. Membership information should be sent to Betty Muzikevik, Treasurer — CBA, 226 Charter Oak Street, Manchester, CT 06040.

☆ ILLINOIS ☆

The 97th annual Illinois State Beekeepers' Association mid-summer meeting will be held June 27, 1987 at the Holiday Inn & Holidome in East Peoria, IL. The conference will be hosted by the Heart of Illinois Beekeepers' Association. Registration for the event will begin at 8:00 a.m. with sessions commencing at 9:00 a.m.

In addition to opening remarks by State Association President Alfred Trost and local President Lloyd A. Lindenfelser, the morning program will include "State of the State in Apiculture" by Eugene Killion,

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Supervisor, Apiary Protection, Illinois Department of Agriculture. Peoria Attorney Kenneth I. Ott will discuss "Legal Aspects of Beekeeping," and Commercial Beekeeper Phil May of Harvard, Illinois, will present a lecture, "Summer Management and Honey Promotion." The morning sessions will conclude with a demonstration and lecture on Bavarian Wax Art Craft by Roberta and Jim Rady of the Bavarian Wax Art Gallery, Anderson, IN.

Keynote speaker will be Dr. Richard Helmich, USDA Bee Research Center, Baton Rouge, LA. Dr. Helmich's presentation will include discussion and video tape on Africanized bees and a lecture on beekeeping in Venezuela. The afternoon session will conclude with a talk by President Lindenfelser entitled "The Honey bee; A Wonder of God's Creation."

A buffet style lunch is planned with advanced reservation required. Special room rates are being offered by the Holiday Inn for conference attendees. The meeting is open to the public as well as beekeepers.

For more information concerning the meeting, contact Robert J. Dubois, Secretary; Heart of Illinois Beekeepers' Association, 423 North Lawndale, Washington, IL 61571.

☆ MASSACHUSETTS ☆

Lagrant's Annual Beekeeper's Outing

The **Hampden** and **Hampshire Massachusetts County Beekeeping Associations** and other invited guests will meet at the home of Frank and Bernadette Lagrant on Osborne Road, in Ware, MA on Sunday, July 12, beginning at 12 noon.

A fast moving, informative and above all, fun-filled agenda is planned for the outing. So many activities will take place that this time schedule will be followed:

12:00-1:00 Refreshments & Business Meetings

1:00-1:30 Wine Tasting — John Weinack and Stanley Orzechowski. John and Stanley, beekeepers from South Hadley, MA and both fermentation enthusiasts will offer some of their choice wines to please and tickle our palates.

1:30-2:30 Pot Luck Lunch

2:30-3:00 Fly Tying — Stephen LaValley. Stephen is a Master Flytier from Haydenville, MA. He is co-author of the book *Fly Fishing the Mill* and has been tying flies for 22 years.

3:00-3:45 Grafting Queen Bee Larvae — Frank Lagrant. Frank, who raises queens commercially, will demonstrate the fine technique of transferring delicate 18 hour old larvae.

3:45-4:30 Grafting Fruit Tree Scions — Roland Sevigney. Yes, by popular demand, prolific Roland will be back. Roland not only knows his bees but is great at graft! Grafting fruit tree scions, that is.

4:30-5:00 Smoker Lighting Contest — You'll learn something about smoker fuel and technique here. You *must* bring *your smoker* and your *own* favorite fuel. PRIZES WILL BE AWARDED.

5:00-5:30 Watermelon Eating Contest. PRIZES WILL BE AWARDED.

5:30 - ??? Bee Talk . . .

Plan to be comfortable while enjoying all of the activities outlined above. Bring with you a veil, camera, smoker, family, lawn chairs, smoker fuel and eating utensils.

Bring a dish with enough for yourself and six other guests for our pot luck lunch. A guide of dishes to bring:

If Your Last Name Starts With	**Bring**
A - G	Main Dish
H - M	Cole Slaw, Salad, etc.
N - Z	Dessert

We have the time, the beverages, and the meeting place. Come rain or shine and enjoy.

For more information call Bernadette or Frank at (413) 957-5064.

☆ NEBRASKA ☆

The **Nebraska Honey Producers** will have their annual summer picnic on Sunday, July 12, 1987 at the Town Hall in Brownville, NE beginning at 12:00 . The picnic will be pot luck. On Saturday, July 11, there will be a 3 hour dinner and dance cruise on the Spirit of Brownville. Cost of the boat ride, dinner and dance is $14.95 per person. Those coming Saturday may eat at the downtown cafe if they do not want to try to bring pot luck items. If you have questions or want reservations for the boat ride contact: J. R. Childers, 1520 "N" Street, Auburn, NE 68305 (402) 274-4710.

☆ MINNESOTA ☆

The Minnesota Honey Producers 1987 Summer Meeting will be July 16-18 at the Holiday Inn, Fergus Falls, MN.

At 7:30 p.m. on Thursday there will be a crop and market meeting with a social hour to follow.

Friday and Saturday will host speaker presentations, dealer displays and good conversation with a Friday evening visit to Sundberg's Apiaries and a barbecue to follow.

All fellow beekeepers are invited to attend as we always have an excellent meeting and a good time.

For more information please contact Darrel Rufer, Secretary, Rt. 1, Box 408R, Waverly, MN 55390 (612) 658-4645.

☆ NEW YORK ☆

Finger Lakes Beekeepers' Club

The summer picnic will be at the home apiary of Dr. Richard Taylor, Rt. 89, Trumansburg, NY on Sunday, July 19 at 1:00.

Discussion will be on marketing honey on roadside stands. Apiary will be inspected for pointers on comb honey production.

Visitors most welcome. Bring folding chairs and a dish to pass. Everything else will be supplied.

☆ OHIO ☆

ATI/OHIO STATE UNIV. Summer Sessions Schedule, 1987

•**July 20-31, 1987 — *International Beekeeping Seminar VII,*** A comprehensive and intensive introduction to international beekeeping that will enable managers and workers to take better advantage of the apicultural potential in designing agricultural assistance programs. Emphasis will be on tropical and subtropical beekeeping.

Week 1: Basic beekeeping July 20-24. A combination of classroom and apiary work directed toward inexperienced beekeepers.

Week 2: Development beekeeping July 27-31. Topics relevant to development apiculture. French & Spanish translation available. Seminar coordinators, Dr. James E. Tew and Dr. H. Shimanuki.

•**August 17-30, 1987 — *Honey Bee Diseases,*** Covering all aspects of honey bee diseases and pests. Will identify all common bee diseases and pests and be familiar with current treatment techniques.

All classes have enrollment deadlines and limited available space. **Early contact is strongly advised.** For registration information, contact

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Dr. James E. Tew, Program Coordinator, ATI, Wooster, Ohio 44691, USA, (216) 264-3911, Cable: ATI-WOOSTER.

☆ PENNSYLVANIA ☆

A beekeeping short course will be held on Friday through Sunday, June 26 through 28 at the Doylestown College facility. Instructors will be Jack Matthenius, New Jersey State Supervisor of Bee Culture, and Dr. Berthold.

In addition to illustrated classroom discussions, hands-on demonstrations are conducted in the College's bee yard and honey house. Included in the field portion of the course are management techniques, brood inspection, bee removal for honey extraction, honey extraction and the many varied uses to which beeswax can be put, including candlemaking.

For more information or to register for this popular course, write or call Delaware Valley College, Doylestown, PA 18901 (215) 345-1500.

☆ SOUTH CAROLINA ☆

The South Carolina Beekeepers Association summer meeting will again be held at the Food Industry Auditorium, Clemson University, Clemson, SC. The meeting dates are July 9, 10 and 11 with the program beginning at 1:30 p.m. on the 9th and ending before noon on the 11th.

Dr. James Tew, a true entertainer, will be our featured out-of-state guest speaker. The program also features Reg Wilbanks, Wilbanks Apiaries, Claxton, GA as well as a number of other speakers expounding on a wide variety of subjects. We will also have our chicken barbecue supper and horseshoe tournament on Friday evening.

Rooms are available for those who wish to stay at the Clemson House. Rates are $12/night single occupancy, $8/night double occupancy and a $3.75 linen charge unless you choose to bring your own.

Let's make this our best meeting yet. Bring a friend or a bunch of friends. The meeting is open to anyone and door prizes will be abundant.

For more information contact Jimmy Howard at 210 Barre Hall, Clemson, SC 29634 (803) 656-3006.

☆ WISCONSIN ☆

The following is the program of the summer meetings of the **Wisconsin Honey Producers Association.**

Monday, July 20th meeting will be at Eau Claire Lake State Park North of August and Wednesday, July 22nd meeting will be at Riverside Park in Watertown.

Monday, July 20th

9:00	Coffee and Donuts for early arrivals
9:30	Call to Order. Dave Miksa presiding Northern meeting, Walter Diehnelt Southern. Crop reports from producers present
10:00	What a beekeeper should do when he discovers bear damage to his colonies
10:30	Experiences, rebuttals, suggestions from beekeepers that have had bear damage in the past
11:00	Beekeeping exam of the experts administered by the program moderator
12:00	Pot Luck Lunch
1:15	What a beekeeper should do when he discovers he has lost some colonies to spray poisoning. Sam Ferguson, Supervisor Compliance Monitoring & Enforcement Section, WI Dept. of Ag., Trade and Consumer Protec.
1:45	Experiences, rebuttals, suggestions from beekeepers that have experienced spray losses in the past.
2:30	The National Honey Research Promotion and Consumer Information Order — Dan Hall, Longmont, CO, Director
3:15	How we are trying to increase the market for your production of honey and beeswax. Mary & Tim Dadant, Hamilton, IL
4:00	Business Meeting, Butch Hauri, President

Wednesday, July 22

The above schedule will apply with the following exceptions:

The State Fair Committee will meet during the noon hour.

The topics on Bear Damage and Spray Poisoning will be reversed in time of appearance.

A meeting of the Executive Committee will be held at Watertown immediately after adjournment.

PROMOTIONAL ☆ OPPORTUNITY ☆

"I LOVE HONEY" Stickers are available through JoAnn Weber.

Utilize this excellent promotional tool. This red with gold lettered self-stick heart will draw people to your honey booth. Your local and state honey queen will find this colorful sticker a valuable asset in promotion. Over 700 stickers for $20.00 postpaid.

For more information please contact Jo Anne Weber, Rt. 2, Clayton, WI 54004.

☆ OBITUARY ☆

LEO DUDGEON

67, of Lancaster, OH died on April 13th, 1987 as a result of an earlier heart attack.

Mr. Dudgeon was born Sept. 16, 1919 in Carpenter, Ohio to Harry and Mina (Nichols) Dudgeon. He was a retired employee of Battelle Memorial Institute, with 26 years' service. He was a member of Fairfield Church of Christ at Lancaster, Ohio State Beekeepers Association and the Hocking County Beekeepers Association; and a past-member of Columbia Grange. Leo was also Bee Inspector of Knox Co. in 1974 and Hocking Co. in 1980. He was a Lancaster-Fairfield County Hospice volunteer. A World War II veteran, Mr. Dudgeon was a recipient of the Distinguished Flying Cross. He was a member of the 8th Air Force Historical Society, the Ohio Chapter of the 8th Air Force Historical Society, the 381st Bomb Group (H) Memorial Association and the 535th Bomb Squadron.

He is survived by his wife, Jacqueline Kibbey Beale Dudgeon; four step-children, five step-grandchildren, a sister and a brother.

EAS '87

VIRGINIA
AUGUST 3-8, 1987

The annual Conference and Show of the EASTERN APICULTURAL SOCIETY will be held August 5-8, 1987 with the EAS Short Course preceding the conference on August 3-5, 1987. The conference will be held on the campus of Virginia Tech (Virginia Polytechnic Institute and State University) in Blacksburg, VA at the Donaldson Brown Center for Continuing Education.

Blacksburg is located in southwest Virginia on US Route 460 off I-81, 40 miles west of Roanoke and approximately 50 miles east of the West Virginia Turnpike's south exit. Piedmont Airlines offers flights from many major cities to Roanoke's Woodrum Field. Limousine service to Blacksburg is available by reservation. Virginia Tech's airport in Blacksburg serves private and chartered aircraft.

Parking for recreational vehicles is available on campus. Hookups are provided for electrical service; however, waste disposal is not available on site.

Participants may choose from two lodging alternatives. Campus dormitories are $9.50/night, single, and $6.50/night/person, double. These rooms are not air-conditioned and linen and pillows are provided. Bathrooms are located on each hallway. Air-conditioned lodging is available at $45.00/night, single, $25.00/night person, double. These are typical motel style with private bath and television.

A Campus Dining Hall - 6 meal package is provided for $18.00 per person. The evening meal is not included in this package but may be purchased on a pay as you go basis for those not attending the special evening events. Meals are also available at the CEC Dining Room, a full service restaurant located off the lobby of the CEC serving breakfast buffet and luncheon plate. Individual meals must be purchased in advance.

The President's Champagne and Wine Dinner/Reception will be held on Wednesday evening and will include champagne, wine, beer and non-alcoholic Alpenglow sparkling Virginia apple cider. Hot and cold hors d'oeuvres along with a standing steamship round of beef will provide ample food to allow this reception to qualify as dinner. The dinner-reception will be held in the CEC Dining Room.

Thursday's Virginia Bluegrass Festival will be held in the Squires Student Center adjacent to the CEC and will feature Virginia Foods with bluegrass music and entertainment. Iced tea, lemonade and beer will be served for your enjoyment.

The EAS Awards Banquet will be held on Friday in the Squires Student Center Ballroom.

EAS-87 in Virginia is going to be a must if you are a beekeeper who is interested in advancing your beekeeping skills, keeping up to date on the latest national beekeeping issues and enjoying the fellowship of others who share the same love for bees, beekeeping and honey.

Don't delay! Send in your registration form TODAY!

Don't wait! You may not get the lodging of your choice.

Don't put it off! It will cost you a $10.00 late fee after July 15th.

Don't be sorry! Come to Virginia for EAS-87.

For registration or travel information contact Frank Fulgham, (804) 786-3515.

CONFERENCE PROGRAM - 1987

Wednesday, August 5, 1987

8:00 Final Day of Short Course (till 5:00)
10:00 Preparation and Review Session for Master Beekeeper Exam. Dr. C. Collison assisted by Master Beekeepers
12:00 Lunch
1:00 Master Beekeeper Written and Laboratory Exams. Dr. C. Collison
2:00 Registration for Honey Show, Photo Salon etc. (Open to 5:00)
4:00 Delegates Meeting
4:00 D'Adant Beauty & Candle Collection, Tim Dadant
6:00 President's Champagne Reception
8:00 Evening Program: World of Beekeeping, Brian Sheriff
8:00 Directors Meeting

Thursday, August 6, 1987

9:00 Call to Order, President Frank Fulgham
9:10 Invocation, Reverend A. A. Blanks
9:15 Welcome to Virginia Tech. Dean, College of Agriculture, Dr. J. Nichols; Dept. Head, Entomology, Dr. T. Payne
9:30 Dreaming About Bees, Dr. R. S. Pickard
10:15 Coffee Break
10:40 Bees and The Media: A Positive Image, Dr. Jim Tew
11:05 Who's Boss in the Bee Hive, Dr. R. A. Morse
11:35 Beekeeping Experiences in Panama, Dr. D. Caron
12:00 Lunch Break
12:00-4:30 Ladies Luncheon Tour
1:30 Start of Workshops
1:30-2:20
1. Dewey Caron, Mead
2. Pat Powers, Brood Diseases
3. Cliff Sunflower, Beeswax Ornaments
4. Steve McDaniel, Bee Photography
2:30-3:20
1. Larry Connor, Writing Bee Newsletters
2. Fred Lamb, Wood Preservatives
3. Steve Tabor, Management for Honey Production
4. John Newdorp, Creamed Honey
3:30-4:20
1. Bill Hartis, Sourwood Chunk Honeys
2. The Krochmals, Honey Plants in Landscaping
3. Kemper Loyd, Floral Sources and Their Honey
4. Fred Lam, Wood Preservatives
4:30 Professional Apiculturists Meeting
4:30-5:30 1. Collison, Masters Beekeeper Program Critique OR 2. Bees on Crosses
6:00 Dinner Buffet and Blue Grass Festival

Friday, August 7, 1987

9:00 Call to Order, Vice President Bob Wellemeyer
9:05 Queen Rearing - Fact and Fiction; Applied and Scientific, Steve Tabor
9:45 What's New About Drones, Dr. Larry Connor
10:15 Coffee Break
10:35 Title, Dr. Anita Collins
11:05 Beekeeping, Varroa Mites and the Iranian Government, Dr. D. B. Komelli
11:30 Bees, Beekeeping and the Law, Dr. L. Geyer
12:00 Lunch Break
1:00 Special Question and Answer Session on Bees and the Legal Aspects of Beekeeping, Dr. Geyer
1:30 Start of Workshops
1:30-2:20
1. John Newdorp, Creamed Honey
2. Kemper Loyd, Floral Sources and Their Honey
3. Pat Powers, Brood Diseases
2:30-3:20
1. Dave Ambrose, Potential for Using Computers in Bee Yard Management, not hardware, one presentation ONLY
2. Steve McDaniel, Bee Photo
3. The Krochmals, Use of Honey Plants in Landscaping
4. Dewey Caron, Mead
3:30-4:20
1. Kemper Loyd, Floral Sources and Their Honey
2. Bill Hartis, Sourwood Chunk Honey
3. Cliff Sunflower, Beeswax Ornaments
4:30 Business Meeting
6:30 Awards Banquet

Saturday, August 8, 1987

9:00 Call to Order - 1988 President
9:05 Nectar Plant Attractiveness and Its Importance to the Beekeeper, D. G. Ayers
9:45 Title, Student Award Winner
10:15 Coffee Break
10:30 Title, Hambleton Award Recipient
11:15 Thinking Like a Bee, Dr. J. Ambrose
11:45 Invitation to 1988 EAS
12:00 Meeting Adjourned

☆ Classified Corner ☆

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

What do you know about the INTERNATIONAL BEE RESEARCH ASSOCIATION? The many books and other publications available from IBRA will deepen your understanding of bees and beekeeping: an IBRA membership subscription — inclusive of *Bee World*, a truly international magazine published quarterly in the English language — will broaden your beekeeping horizons. Details from IBRA voluntary representative H. Kolb, P. O. Box 183, 737 West Main, Edmond, OK 73034 (phone 405-341-90984); or from IBRA, 18 North Road, Cardiff CF1 3DY, UK.

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INDIAN BEE JOURNAL. Official organ of the All India Beekeepers' Association, 817, Sadashiv Peth, Poona 411030. The only bee journal of India published in English, issued quarterly. Furnishes information on Indian bees and articles of interest to beekeepers and bee scientists. Annual subscription postpaid in foreign countries: For individuals US $7.00; for institutions, companies and corporate bodies US $10.00 or it's equivalent, to be received in advance by IMO or bank draft, payable in Poona (India).

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

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

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

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FORECLOSURE AUCTION AUGUST 29, 1987. COMPLETE LUCRATIVE ARIZONA BEEKEEPING BUSINESS. Very clean, topnotch, ten frame operation with 1987 queens. 87 registered proven locations. 53 are state protected with four mile protection zone state enforced including the finest citrus locations in Arizona. Absolutely no competition and no pesticide exposure. Locations can easily support 9,000 colonies. Famous water white honey area. Prime mesquite, catsclaw, alfalfa, wildflower, brush and agricultural locations. Year around production. Pollination on apples, pistachios, melons. These and all other locations within sixty miles of Tucson. Excellent potential wintering others' beehives as sideline as well as raising queens, packages and nucs. Complete, automated honey house, hydraulic liftgate trucks, pollen traps and production equipment. Honey and pollen business. Originally sold due to owner injured in semitruck collision. Auction to occur at 10:00a.m., Saturday, August 29, 1987 at 3102 North Winstel Blvd., Tucson, Arizona 85716. Business will not be parted out. Bidders must be prequalified. For more information call Tom Martin **ARIZONA BEE PRODUCTS** 1-602-327-3800. Evenings. (8/87)

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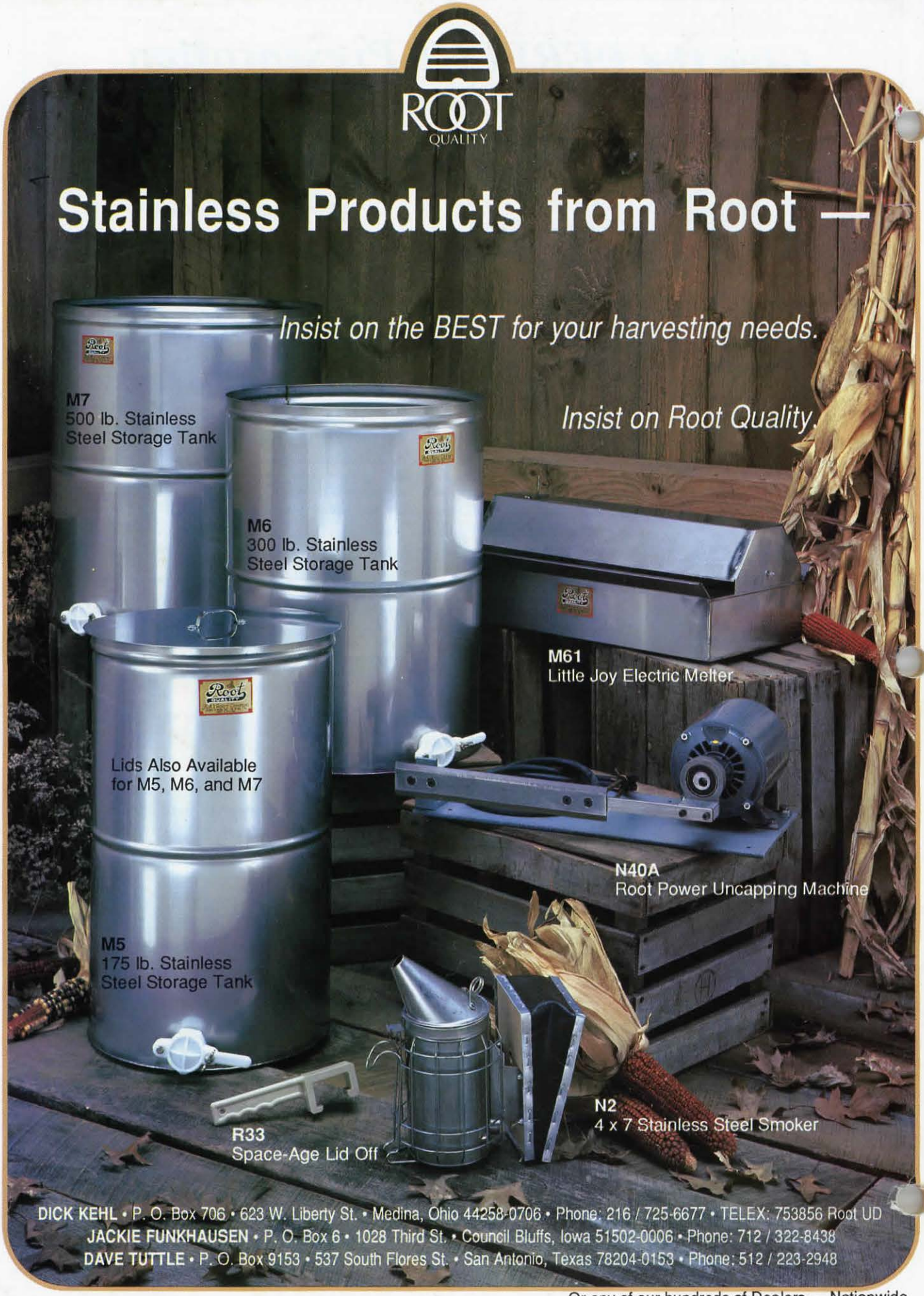

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