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COVER.... You know what they say about an apple a day... but what happens when the honey bee is kept away by arbitrary zoning rules and regulations?



This is it — this is what we've all been waiting for, right? The busiest time of the year will soon be here. From now until the main flows are over is what beekeeping is all about. Whether a hobbiest or professional, all the advance planning, early preparation and crossed fingers come to fruit in June.

But don't just let it happen. You can't sit in the backyard now and HOPE it all works out — you've got to be prepared for those last minute changes or emergencies NOW because a reduced crop (or a dead hive) may be the result.

So, in June we have **INSTANT** information on **laying workers** and what to do about them; and **requeening** is a definite possibility, so we have some good information on that too!

Pesticides a potential problem? Two great articles give some insight and some information on dealing with this nasty problem.

Are you getting ready to show some of your fine hive products at a show this summer? "**Prize Winning Honey**" gives some pointers in that direction along with a critique of the EAS Honey Show results for the past several years — something to work for — starting now.

Marketing strategies; maybe a little poetry and all the other surprises, plus our regular writers and columnists will be here soon — Coming in June.

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I'm not usually one to point fingers; casting the first stone and all that. Besides, sometimes they point back, and I have enough problems without looking for more. But something happened recently that I just can't ignore — so here goes.

We had company for supper recently, and as usual, the discussion came around to beekeeping, and more specifically, marketing honey. One thing led to another and pretty soon we were discussing the taste of different types and brands of honey.

Diana and I are collectors of honey to a degree. Not professionals or even very dedicated, but we always have several different jars of honey, or honey products, setting in the cupboard. So we brought them all out and set them on the table. Some had been opened previously, most not; of those opened most were nearly full, but a couple were only 1/2 full or so.

Then we got out a bunch of plastic spoons and had a tasting session. It was, for the most part, an insult to my taste buds, and a black eye for the industry I am a part of — it was embarrassing.

This is where the finger pointing comes in, but before I go on I MUST qualify this research. We had only one sample jar of each product. This is certainly not a reliable sample. I realize this and I want to make sure you do too one bottle does not a research experiment make. Okay?

So, first product. Sue Bee's new Barbecue Sauce, made with 48% honey. Probably the best sauce I've ever bought — bar none!

Next, a bottle we purchased in Michigan recently; a 12 oz. plastic tube of creamed honey. "Pure, raw and natural" — inedible, absolutely terrible, bitter, sour, yuk!

Then, Smuckers Spreadin' Honey. A pectin based spread. This is a family magazine — enough said.

Next, a creamed honey from a friend down south. Taste, excellent; Consistency, terrible; Appearance, terrible.

Then a sample from Oklahoma, given to me by Mr. Lashbrook. Perfect, clear, sweet, clean. A treat. Next, Sue Bee Clover Honey, a 12 oz. squeeze tube. New. The container was ideal. Easy to use, not messy and attractive. The honey in it was, at best, poor. A burned after taste persisted.

Then Stoller's Creamed Honey. Probably the best I've ever eaten. Better than Diana's. Attractive and easy to use.

Next, a sample of our own honey from last year; not bad, a bit strong for my taste, but clean and sweet.

Then a sample from N. Carolina, given to me by Mr. Bob Cole. Smoooooth and sweet. A product to be proud of.

Then Sue Bee Spun Honey. Taste, poor. Obviously an overcooked blend. The consistency left much to be desired too.

We're getting close now. Next we tried some from a friend in northwest Connecticut, Mr. Chuck Howe. Strong, tasty and thick. An acquired taste I'm told. But it was clean and sweet. A good product.

Finally! A sample of U. S. Government Honey, you know — the free stuff they give out occasionally. Personally, I'd rather eat dog food than try that sample again. Not only was it burned, it had "things" in it.

Remember, only one sample from each of these suppliers. Not good research.

Five of these samples were excellent, certainly worth selling at the going local rate. They were products I or anyone would be proud to sell. Nor would I worry about a customer coming back with a complaint.

But I'll tell you this. If a customer bought one of those other samples you'll never see them again. Period. And, in all probability, no beekeeper will ever see them again. Gone.



Except for the last sample, all of these "looked" like good honey. And with attractive labels, would be enough to entice a shopper to try one. Once — and never again.

I don't know how loyal the American Consumer is to particular honey brands, but if they were, they won't be anymore. And if they weren't they'll just quit buying.

Can we afford this? Can Sue bee, or Smuckers, or you, afford to have this happen to a customer? Let alone someone like me foolish enough to write about it in a magazine.

I hope this was a fluke, but five of 12 samples were, in the opinion of the 3 of us, inedible. I know I'm going to hear about how we shouldn't criticize each other; how this isn't going to do the industry any good; how dirty laundry should be kept at home — ad infinitum.

But I'm tired of hearing the "I can't sell my honey" lament, and "It's all the fault of the imports" complaint. Let's get it together here folks. Before *you* cast some stones, take a look at, and a taste of, what you are selling.

I just returned from one day of the International Conference on Africanized Honey Bees and Bee Mites in Columbus, Ohio. This was definitely a class act, a heavy duty scientific class act, but a class act nevertheless.

There were nearly 80 talks scheduled, plus 6 keynote speeches scheduled during the three day meeting. That's alot of information to absorb for anybody, scientist or not.

I'm not going to list all of these talks here. Many of them were very esoteric and not really appropriate to this magazine. However, some were VERY appropriate, and I think you might be interested in what some of these academic types are up to lately.

 Varroa reproduction rates on Africanized and European bees

 Defensive behavior genetics of Africanized and European bees
 Identification of AB

Continued on Page 309

.....

May 1987

Monthly Honey Report

May 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	-		Rep	orting F	legions					
Sales of extracted, unproce	ssed hon	ey to Pa	ckers, 1	7.O.B.	Produce	sr.	-			
Containers Exchanged	1	2	3	4	5	6	7	8	R	Α
60 lbs. (per can) White	37.00	36.96	45.00	36.30	26.40	36.25	40.00	41.40	24.00-45.00	37.84
60 lbs. (per can) Amber	34.67	35.18	42.50	33.80		33.12	36.00	36.30	21.00-43.00	35.29
55 gal. drum/lb. White	.53	.63	.50	.48		.60	.56	.53	.4066	.54
55 gal. drum/lb. Amber	.49	.57	.50	.44	.51	.50	.52	.51	.3563	.50
Case lots Wholesale	10.00						1.0	1		,
1 lb. jar (case of 24)	26.43	27.59	22.95	23.76	25.92	24.75	26.50	28.05	22,80-38,40	26.09
2 lb. jar (case of 12)	25.03	25.80	24.45	23.00	23.76	24.83	25.10	29.40	21.00-34.80	25.35
5 lb. jar (case of 6)	29.27	27.15	22.40	23.80	23.04	26.89	25.50	27.50	22.40-33.00	26.66
Retail Honey Prices		1.00	10.00					-		
1/2 lb.	.93	.88	.95	.83	.83	.83	.90	.89	.7995	87
12 oz. Squeeze Bottle	1.37	1.35	1.06	1.27	1.17	1.22	1.35	1.35	1.06-1.59	1.30
1 lb.	1.47	1.59	1.69	1.48	1.43	1.50	1.65	1.74	1.29-1.92	1.57
2 lb.	2.47	2.81	2.75	2.92	2.59	2.75	2.85	2.50	1.75-3.55	2.75
2-1/2 lb.	3.51	3.70	3.25	3.97	3.49	3.33	-	2.95	2.95-4.60	3.52
3 lb.	4.10	4.23	3.87	3.49		4.15	3.95	3.40	3.40-4.98	4.02
4 lb.	5.25	4.73	4.65	5.89	4.99	4.53	4.95		4.50-5.89	4.93
5 lb.	6.50	5.62	5.50	5.75		5.18	5.75	5.93	5.25-6.61	5.79
1 lb. Creamed	1.75	2.00	1.50	1.52	1.65	1.30	1.60	1.57	1.25-2.49	1.61
1 lb. Comb	2.25	1.83		3.00		1.55		2.25	1.55-3.00	2.08
Round Plastic Comb	1.90		2.00	2.00		1.60		1.65	1.60-2.00	1.85
Beeswax (Light)	.97	.91	1.25	1.25	1.05	.87	.95	.95	.55-1.25	1.02
Beeswax (Dark)	.85	.79	1.00	1.00	.80	.80	.80	.85	.50-1.10	.85
Pollination (Avg/Colony)	23.25	15.00	15.00	23.10		21.00		24.50	15.00-28.00	21.86

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 \$1.29-1.92 and the average price across the country is \$1.57.

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 8 has a price index of 1.00 this month and remaining regions are compared to that index.

•Region 1.

Price Index .80. Sales generally slow, and lower prices reflect demand. Feeding still required in some areas. Early pollen available in many areas. Much equipment for sale as there were many colonies lost in some areas, especially in the North. Late spring snows not helping matters.

•Region 2.

Price Index .89. Sales and prices improving a bit in most areas. May be due to increased prices of quality products and decreased prices of poor quality honey. Variable weather patterns have given fair and sunny conditions to some, while others have had cold and rainy. Pollen and nectar

sources available in most areas, but many colonies still hungry.

•Region 3.

Price Index .75. Prices and sales steady. demand moderate. Early build-up has helped many hungry colonies, but some still need feed.

•Region 4.

Price Index .68. Prices, demand and sales down. Warm, mild temperatures and weather have advanced spring crops. Some still hungry, but should be moving into surplus soon. Watch for drone laying colonies due to poor fall mating season. •Region 5.

Price Index .83. Prices and sales improving. Mild winter has helped early build-up, but large populations may need feeding before spring flows start.

Region 6.

Price Index .76. Sales fair to slow with prices declining. Colonies in good condition for early flows. Watch for some needing feed.

•Region 7.

Price index .88. Sales steady to increasing with prices steady. Early pollen available, low winter losses and some feeding required in some areas.

•Region 8.

Price Index 1.00. Sales mixed with some areas brisk, while others slow. Prices generally up, especially wholesale. Apricot and cherry pollination underway in north, almonds done and apple and avocado underway in south. Government loan honey beginning to move, with packers paying slightly higher prices in southern areas.

See our Annual Honey Report on Page 261.

Gleanings in Bee Culture ANNUAL HONEY REPORT

What do all those Honey Report numbers mean every month? What can you do with them? Do they help your marketing program? Do you use them to make sales decisions?

When presented on a month by month basis, with little else to go by, the Monthly Honey Report stands alone. A voice in the dark.

Well no more! We've taken all those numbers and turned them into the best honey report you've ever seen. Even the USDA hasn't gone to these lengths to present this type of information. In fact, this analysis is the first of its kind in Bee Culture, (and maybe anywhere!).

We revamped the Monthly Honey Report in August, 1986. Therefore this years Annual Report represents only nine months. We present this report in May because it is an ideal time of the year to summarize the past seasons harvest and sales. We start with **Chart #1**, a summary of prices for each unit listed for each region. On the far right side is a column with the average price for each unit for the entire year.

Each price listed represents the Annual Average for each region. For instance, the Annual Average retail price for a 1/2# jar in region 1 is \$1.00, while the Annual Average retail price for a 1 lb. creamed honey in Region 8 is \$1.61. As you look across this chart, you will notice variations by region, some higher than the national average, while some are considerably lower.

Remember, these are only averages, but the trends in each region are obvious. Chart #2 is an analysis of how each region compares to the rest of the country. It is derived from the price index listed in each months honey report, and gives those trends you notice a tangible value.

Wholesale Extracted									
Soles of extracted	annead h		Dacker	EOP	Drade	Car			
Sales of extracted, unpro	1	2	3	4	5	6	7	8	Avg.
60 lbs. (per can) White	38.61	38.05	39.18	35.13	47.50	36.46	38.50	40.91	39.29
60 lbs. (per can) Amber	35.89	34.65	38.23	29.83	39.42	32.81	36.63	37.76	35.65
55 gal. drum/lb. White	.52	.56	.38	.52	.44	.61	.58	.57	.52
55 gal. drum/lb. Amber	.46	.51	.42	.43	.59	.54	.53	.50	.50
Case lots Wholesale									
1 lb. jar (case of 24)	27.80	27.35	25.88	24.39	25.62	24.93	25.34	28.74	26.26
2 lb. jar (case of 12)	28.13	26.08	25.02	22.71	23.24	25.53	28.21	26.98	25.74
5 lb. jar (case of 6)	30.36	27.88	25.61	24.17	25.41	24.87	25.42	27.69	26.46
Retail Honey Prices									
1/2 lb.	1.00	.89	.89	.75	.86	.88	.84	.96	.88
12 oz. Squeeze Bottle	1.37	1.29	1.28	1.33	1.24	1.27	1.18	1.37	1.29
1 lb.	1.53	1.55	1.41	1.49	1.48	1.52	1.53	1.61	1.52
2 lb.	2.64	2.79	2.26	2.83	2.69	2.79	2.78	2.74	2.69
2-1/2 lb.	3.46	3.68	3.15	3.97	3.63	3.36	3.41	3.30	3.50
3 lb.	3.96	4.21	3.80	3.27	3.97	3.93	3.72	3.55	3.80
4 lb.	5.09	4.79	4.56	5.26	4.81	4.54	4.79	-	4.83
5 lb.	6.63	5.71	5.59	5.77	5.97	5.25	5.42	5.52	5.73
1 lb. Creamed	1.85	1.57	1.48	1.55	1.66	1.41	1.53	1.57	1.58
1 lb. Comb	2.19	1.90	1.96	2.49	2.24	1.87	1.85	2.33	2.10
Round Plastic Comb	1.98	1.63	2.14	1.82	1.80	1.74	1.91	1.82	1.86
Beeswax (Light)	1.05	1.04	.98	.92	.94	.98	1.10	1.13	1.02
Beeswax (Dark)	.91	.93	.82	.81	.95	.91	.89	.94	.90
Pollination (Avg/Col.)	23.88	16.81	18.16	26.95	12.00	21.94	21.80	24.36	20.74

Chart 1.

Average price during the months August, 1986 through April, 1987 for Regions 1-8.

May 1987

When looking at the Wholesale price index on Chart #2, you can see that region 8 is a good place to sell honey wholesale. This is followed closely by regions 1 and 5. You may think that the difference between 1.00 and .99 is small, but it actually represents between a 10% and 20% difference in prices, depending on the original value of the items.

Again, look at Chart #2. While region 8 was the highest for wholesale sales, region 1 ranked best in the retail trade. In fact considerably better than most regions. Interestingly, region 8 ranked the lowest in the retail price index.

REGION										
1	2	3	4	5	6	7	8			
Wholes	ale									
.99	.95	.95	.84	.99	.89	.95	1.00			
Retail					1					
1.00	.95	.90	.97	.96	.90	.91	.86			
Total										
1.00	.967	.936	.896	.983	.899	.939	.963			

Chart 2.

Wholesale, retail and total price index figures for all regions during the period of August, 1986 through April, 1987.

When putting together these 2 figures, (retail and wholesale), a weighted average is the result, here labeled **Total**. This means that all values are considered, and it is taken into account that there are more retail items listed, but that wholesale prices are sometimes much greater. The figures listed across the total line on **Chart #2** indicate the best 'overall' region, but does not indicate the previously mentioned differences.

From the Total, region 1 has the highest score. The large difference in retail sales prices was enough to make this score. Region 1 is followed by region 2, who, although not the highest in either wholesale or retail, remains sufficiently high in both to do well in sales index, and hence as an area to sell honey in. Graph #1 shows these relationships within each region and between regions.

Next, we take a look at the seasonal effect, and the corresponding product availability and holiday demand on prices. This analysis did not include wax or pollination fee prices because either information was difficult to obtain, or so seasonal that comparisons would have been difficult to analyze.

Chart #3 shows prices obtained for all regions for each month, starting in August 1986 through April 1987. The column on the right is the average price for all months, and is

			Mo	nthly 1	Report	2				
Wholesale Extracted										
Sales of extracted, unj	processe	d hone	y to Pac	kers, F.	O.B. P	roducer				
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Avg.
60 lbs. (/can) White	39.79	37.06	39.96	41.12	40.36	39.62	39.63	38.37	38.33	39.29
60 lbs. (/can) Amber	35.78	32.77	35.87	37.77	36.07	35.24	35.65	35.79	31.29	35.65
55 gal. drum/lb. Whit	e .55	.52	.55	.53	.53	.53	.53	.51	.48	.52
55 gal. drum/lb. Amb	er .53	.49	.52	.54	.49	.47	.48	.49	.48	.50
Case lots Wholesale										
1 lb. jar (case of 24)	25.38	27.01	26.57	26.56	26.23	31.19	26.84	26.68	25.42	26.26
2 lb. jar (case of 12)	25.92	26.10	27.45	25.38	24.79	30.12	25.59	25.79	25.77	25.74
5 lb. jar (case of 6)	26.13	26.13	27.28	26.12	27.12	26.03	26.22	27.14	26.42	26.46
Retail Honey Prices										
1/2 lb.	.89	.88	.95	.90	.85	.88	.87	.87	.88	.88
12 oz. Squeeze Bottle	1.29	1.26	1.33	1.32	1.34	1.29	1.28	1.27	1.27	1.29
1 lb.	1.51	1.53	1.51	1.53	1.49	1.53	1.51	1.52	1.48	1.52
2 lb.	2.75	2.69	2.78	2.51	2.74	2.75	2.70	2.68	2.72	2.69
2-1/2 lb.	3.52	3.51	3.55	3.35	3.49	3.52	3.52	3.48	3.43	3.50
3 lb.	3.75	3.66	3.80	3.86	3.76	3.98	3.80	3.84	3.78	3.80
4 lb.	5.01	4.90	4.66	4.64	4.91	4.91	4.92	4.86	4.89	4.83
5 lb.	5.80	5.72	5.90	5.74	5.71	5.74	5.72	5.69	5.60	5.73
1 lb. Creamed	1.60	1.58	1.57	1.60	1.59	1.64	1.61	1.54	1.53	1.58
1 lb. Comb	2.12	2.04	2.27	2.16	2.02	2.06	2.08	2.16	2.08	2.10
Round Plastic Comb	1.80	1.94	1.83	1.94	1.82	1.77	1.83	1.84	1.75	1.86

Chart 3.

follows.

process order.

Date

Name

Street

City

UPS

Send orders directly to:

Average price across all regions for the months of August, 1986 through April, 1987.

the same as on Chart #1.

Remember again, these are only derived as in the price index.

For 1987

price/case

\$21.15

19.89

19.05

16.80

\$69.00

64.00

50.00

Zip

OTHER

averages, but the trends are obvious. Chart #4 is an analysis of how reports about 3 weeks ahead of schedule, each months reported data

each month compares to the other 8

NEW PACKAGING

hive. Its height, 1/2 inch, fits under all hive caps.

Cases 1-5

6-11

12-22

24-49

1-10

12-23

24-50

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A high protein food for honeybees • The Beltsville Bee DietTM is a complete brood rearing diet

• The Beltsville Bee DietTM moves the Growth curve of brood Buildup back six (6) to seven (7) weeks prior to pollen flow. The new package offers a more economical 12 oz. package for each

· Each case now contains 12 ready to use packs and is priced as

12 oz. unit price

\$1.76

1.66

1.59

1.40

BULK (50) Ib. PAILS

\$1.38

1.25

1.00

Freight collect, F.O.B. Frenchtown, NJ. Allow three (3) weeks to

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call (201) 996-2155 or your local A. L. Root Dealer

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Specify UPS, Parcel Post, Truck, etc. Enclose check or money order.

researched and developed by the USDA in Beltsville, Maryland.

Since our reporters send in their



Actual size about 6". No two are exactly alike. Each is initialed and numbered by the woodsmith.

TRUELY A COLLECTORS ITEM OR FINE GIFT



GLEANINGS IN BEE CULTURE

is actually a bit dated. For instance, sales prices in July do not get reported until the August issue. Keep this in mind as you read these charts.

The greatest variation in thes

				MO	NTH			
Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Who	lesa	le						
.94	.92	.97	.97	.95	1.00	.95	.95	.91
Reta	il							
.99	.99	1.00	.98	.99	.99	.99	.99	.97
Tota	1							
.95	.93	.97	.97	.92	1.00	.96	.96	.92

Chart 4

Wholesale, retail and total price index figures for the months August, 1986 through April, 1987 across all regions.

prices is reflected in the Wholesale price index. Ranging from a low of .91 in April to 1.00 in January, represents obvious fluctuations.

Retail prices are fairly constant, but new crop availability in October seem to be the key in this index.

The differences in Wholesale and Retail values for each month do vary, and some interesting comparisons can be noted in September and April. This spread coincides with the 2 lowest valued months. The price of wholesale goods during those months Continued on Page 264





Graph 2.



(507) 896-3955

Annual Report... Cont. from Page 262

weighed heavily on the total outcome value. Perhaps something to consider when selling at wholesale prices.

January's prices, actually reflecting December's sales, show fairly well that the Christmas season is a good sales period for both wholesale and retail sales. Another consideration when buying or selling honey.

Graph #2 shows these sales comparisons.

One more thing to consider is the variation in prices between regions, compared to variation in prices across months. While there are considerable price differences between regions, for both retail and wholesale prices, there is far less variation during the year. This means that although prices may be low in one region or high in another, they are fairly constant in that region throughout the year.

For instance, region 1 has a fairly high priced retail trade, when compared to most other regions. However, production costs are not considered in this analysis. Nor are cost of living expences considered when purchasing a jar of honey. Therefore, the retail cost is high for reasons other than shrewd marketing practices, although that may play an additional role.

The Annual Honey Report is for your use. Note the trends within your region, and across the months. Probably the most important aspect of all this is "what does it cost you to produce your honey?' If you sell a 1# jar at the same price, or 2 cents lower, than your neighbor just to get the business, are you making money? Or, are you losing money? If your product costs you \$1.00 to produce, will you sell it for less? If it is a good product, packaged attractively, is clean and marketed effectively, you can sell it at YOUR price, not your neighbors.

A good management program includes a good marketing strategy, and this is one more tool to help build a strong program.

Northern Queens Honey Production Queens Tested: 1-5, \$10.00 - 6-10, \$9.00 11-25, \$8.00 each Not tested: 1-5, \$7.00 - 6-10, \$6.00 11-25, \$5.00 each Queens available from our area from April to August. Scherer Bee Schererville, IN 46375

GLEANINGS IN BEE CULTURE

(219) 865-2898

P. O. Box 461



Dear Editor:

Bluevine yields a heavy body, mild, delicious light amber honey. It starts yielding around the middle of July and lasts until the latter part of August, the heavier yields occurring from the first until the 20th of August. It only yields in hot, dry weather. It yields heaviest in extreme drought conditions.

The bluevine flower consists of a number of florets that extend away from the main flower. I timed two bees, and one of them worked 80 seconds on one floret; the other one worked 120 seconds on another floret. When they left the plant they sank to the ground, they were so heavy laden.

In some years we would have a good bluevine flow starting, and then it would stop on account of rain. Bluevine doesn't yield in wet, cool weather. We were lucky to get a shallow super of honey extracted during cool weather.

One day I stopped at the south bluff of the Missouri River, and between the Missouri River proper and the south bluff was an expanse of bottom land planted in corn. On top of this corn field you could see neither stalks nor tassle, for the vines spread over the entire top of the field. It was all matted with bluevine.

Bluevine honey does not granulate, unless it is mixed with heartsease or soybean. One year we had a large crop of extracted bluevine. We packed the last in November. The following July we got a call from one of our roadside stands needing honey. The only honey I had on hand was the bluevine we had packed the previous November. When I loaded it on the pickup truck, I sampled some of the 2-pound jars and found no granulation.

Another time we had a large crop of basswood and clover comb honey, plus bluevine. When we started cutting in the basswood or clover we found granulation. In the bluevine, none. All the honey was stored in a warm, dry room. Bluevine will ferment if stored in a cool damp place.

Back in the 1930's there was a firm in New York City by the name of Prost and Colahan that handled honey from different states, and also from some foreign countries. I shipped them 25 cases of 24 onepound jars for a number of years, and they distributed that over the whole country.

They sent some circulars out too, and in one of those circulars it mentioned bluevine honey by the name of "Kalthoff's Bluevine". This honey was sent all over the United States and some of it landed in the Farmer's Market in San Francisco. One day a movie star picked up a jar of that bluevine honey, and for several years I had to furnish him bluevine honey. He sent his agent out every year.

A man from Seattle wrote this: "I got a small jar of your bluevine honey from Prost and Colahan in New York City the other day. I have made a hobby of honey for a long time. I find it is the best I have ever tasted. It has a splendid flavor and aroma and body, but most importantly, it is properly ripened". I sent him bluevine honey for a number of years.

A lady from Michigan wrote, "Some years ago we received a gift assortment of honey, among which was a jar of your bluevine honey. My husband says it is the best he has ever tasted".

I close by quoting from Readers' Digest, June 1949, page 111. The article is entitled "The Golden Wonder of Honey" by Donald Culross Peattie: "Did you have a childhood between the Missouri and the Rockies? Then alfalfa honey is the taste to bring it back. More delicate still, and ruby-rare is the honey from those pinewoods of the Great Lakes



States, whose red raspberries have taken over the clearings. Down around Uvalde, in Texas, they boast they have the best honey in the world — that's made from cat's claw and huajillo. Or will you have your honey out of the blossom of Missouri bluevine, Michigan milkweed, Maine blueberry, or just from the goldenrod of New York State?"

After over 50 years of producing bluevine honey I think it is one of the fine honeys of the world.

Please do not write to me for more information on bluevine as I am unable to respond. I only want to share this with your readers.

Carl Kalthoff Lexington, MO

Dear Editor:

Ten African beekeeping officers arrived at Fairview College on Saturday, January 24th and began a week of orientation before starting a nine-month development and upgrading program.

The Tanzanian beekeepers were tired but excited after 35 hours of travel time finally brought them to the Grande Prairie airport where they were met by College representatives. The Africans were accompanied by Dr. Robert Turner, Dean of Student Services, who flew to Tanzania to help with preparations.

After spending the remainder of the weekend resting and buying suitable winter clothing, the visitors were given a tour of the Fairview College campus and an official welcome by College President, Dr. Neil Clarke.

The only woman in the class, Mary Shirima, addressed the College on behalf of her classmates and expressed their gratitude for the spirit of co-operation they've been shown.

Later in the week, they toured the town of Fairview, including several businesses, the curling rink, and the bowling alley. Most had never been on ice before, or thrown a bowling ball, but they were keen to learn and enjoyed both sports.

The group is here under the second phase of an agreement between Fairview College, the Canadian International Development Agency, and the government of Tanzania to provide technical training for the purpose of improving beekeeping in their country.

The first group came to the College in 1984 to attend the internationally recognized Beekeeper Technician Program which is divided into three parts and includes a sixmonth work experience opportunity somewhere in Canada and four *Continued on Next Page*

May 1987

Mailbox... Cont. from Page 265

weeks of business and management education.

The program has been in effect for nine years and has attracted students form Trinidad, Ireland, England, Wales, Austria, France, Denmark, South Africa and the United States.

> Shane Westin Fairview College, Box 3000 Fairview, AB TOH 1LO

Dear Editor:

My letter in Gleanings (October 1986, p. 497) asserting that dark comb makes dark honey draws fire friend, come Dr. Richard from my comb honey aficionado, Taylor (Gleanings, January 1987, p. 25) even though I quoted him as an 'authority' for my remarks. Professor Roger Morse, he maintains, agrees with him. The March issue of Gleanings (p. 142) carries this comment from my friend, bee venom therapist Charles Mraz: "After 65 years of beekeeping, I cannot see the difference between honey produced in old combs and new combs."

In that same issue, bee specialist Dr. Elbert R. Jaycox (p. 156) proclaims: "Although we have finally realized that dark combs discolor honey stored in them, we have not generally accepted the idea that old, black combs should be replaced routinely with new sheets of foundation."

All the men quoted are "experts", generally recognized as such in their own specialties. Can all be right?

Consider my "experience" (here defined as "knowledge derived from direct observation from facts or events observed"). On August 31, 1985, I extracted one deep and one medium super of tulip poplar honey (a darkish nectar, the main flow in Central Maryland the last two weeks of May) from combs that were blackish. Unlike my own honey (same source, extracted on June 25), this honey came out "looking like used motor oil and tasted worse." I could detect a slight taste of propolis in it — and so recorded in my journal. Although I did not ask, I'm sure that somewhere along the line - at least for the deep super - that dark comb must have been used for brood rearing.

Also note the following. Just before the larva spins its cocoon, according to the experts, it defecates for the first and last time, as the feces become trapped between the cocoon and the cell wall. Each time this happens in the brood cycle, the cell becomes darker and darker because the worker bee laundry ladies use propolis to coat it (this sticky resinous material is known to have anti-fungal and antiseptic properties) before the royal lady will deposit another egg therein.

What do you think happens to the nectar deposited in those cells no longer used for brood rearing? Does it come out the same color as it went in? The same must be true for old dark comb never used for brood. My assertion that DARK COMB MAKES DARK HONEY still stands; however, since I consider myself a reasonable man, I will change my view if anybody can show me positive "scientific" proof to the contrary.

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

Dear Editor:

In your April 1987 issue, I found both letters concerning daffodils (narcissus) interesting because of our experiences with them here in Kansas. We have twenty hives and are always looking for nectar and pollen plants for early spring when there is so little here. In 1978, we planted a bushel of daffodil bulbs, an *Continued on Next Page*



Mailbox...Cont. from Page 266

early-blooming, all-yellow variety with a deep trumpet. When they bloom, there is not another spot of color on the landscape. Each year we are amused at the bee's over-eager reactions to the daffodils. As the first trumpets are just beginning to open, three and four bees are ready to enter, hovering at the first tiny opening and actually pulling at the edges of the trumpet before it opens. When it does open, they wallow in the pollen. When the daffodils are in full bloom, every yellow flower has a brown spot in the center, and, when I bend over and sniff one, I find I had best do so with caution.

I would like to remind everyone that planting daffodils is a one-time expense. We have had almost ten years of blooms now from these same bulbs. Where we planted one bulb, we now have a clump and they have naturalized through the woods near the hives.

Lela Williams La Cygne, Kansas

Dear Editor:

Previously unverified reports of Africanized honey bees in Chiapas, Mexico have been CONFIRMED by the personnel at the "Laboratorio de Identificacion de la Abeja Africanizada" Direccion General de Ganaderia del Estado de Veracruz, Banderilla, Ver and SARH people (Department of Agriculture). The bees were also confirmed by J. M. Labougle, from Univ. Kansas and F. J. Reves from Universidad Veracruzana, who has studied the bees since 1982 in Panama, asided Dr. D. Roubik monitoring the arrival of African bees in this Central America country.

The National Beekeepers Union distributed to all members a Newsletter with information about this event. The Veracruz Beekeepers and the Patronato de Lucha contra la Abeja Africana provided funding to develop the Program of Identification and Control of African Bees in Veracruz regarding that 80% of local beekeepers are migratory (this state is close to two border states, Tamaulipas in the North and Chiapas in the south) and may help us knowing the movement is assisted by the apiculturists.

Migratory swarms were caught by swarm traps located close to the border by a large project under the direction of Dr. J. A. Zozaya from the S.A.R.H. (Agriculture Department in Mexico) and the first bees were collected close to Tapachula in the border and Biol. J. I. Cuadriello from C. I. E. S. (a researcher of local



stingless bees) collected samples for identification. Both the bees, and the cell size in honey combs of their nests were substantially smaller than those of the common European honey bees, demonstrated by F.A.B.I.S. technique, that the bees were Africanized.

The unwelcome bees could arrive in force by 1988 into the United States. This aggressive bee poses a national problem to Mexico and its 47,000 beekeepers before they drift into American territory. The losses to Mexico, a major honey producer will be great but we must assume that when the bees settle in the U. S. the financial loss could range \$26 million to \$58 million as estimated by a recent Agricultural Economic report.

As we know by recent research at the Bee Genetics and Physiology Research Lab. at Baton Rouge, LA., these bees are not destructive or malicious, but they fiercely defend their colonies when disturbed and all colonies are potentially dangerous if accidentally disturbed when they become established in public buildings. Once disturbed, the Africanized bee remains very sensitive to further disturbances for hours or in some cases days. Rough estimates suggest that these bees may colonize mainly in areas of southern states in the U.S. (the queen and package bee production area) California, Arizona, New Mexico, Texas, Louisiana, Mississippi, Alabama, Georgia, Florida, North Carolina, South Carolina. The swarms might move farther north but die out if they are not well established with enough winter stores. The problem that may arise in

U.S. and Canada is the rapid spread by crossbreeding with natural mating used by most queen producers in U. S. It sounds obvious that APHIS will develop a quarantine on bee shipments from 11 states most likely to be colonized by the Africanized bee. Needless to say, 850,000 colonies operated by thousands of hobbyists and part-time beekeepers may cease operation because of poor yields, management problems, apiary locations and of course, government regulations.

The Africanized bee will radically and permanently alter the beekeeping industry in Mexico. Like in the U.S., management will become far more difficult and the profitability of beekeeping will decline, as it has in most Central and South American countries except Argentina and Chile, were the incidence is not so high.

Africanized bees are noteworthy for excessive swarming (up to 16 times per year) which is a major reason for poor yields. These bees abscond, leaving the entire colony and the bees move to a new location. They are fierce robbers and may help to spread diseases like AFB, EFB, Acariosis, and worse the Varroa mite.

What lies ahead? USDA scientists are hoping to find answers to the seven basic problems associated with this bee:

1. The excessive defensiveness of Africanized bees creates several problems of management for beekeepers and a moderate public health problem.

2. Reduction in commercial honey production due to reduced

Mailbox... Cont. from Page 267

production by Africanized bees and fewer colonies managed because of defensiveness and absconding.

3. Current technology may be insufficient to maintain and produce desirable commercial stocks of bees in Africanized areas.

4. There are difficulties associated with the identification of colonies with mixed European and Africanized ancestry. Easy identification is necessary to assist control programs.

5. Africanized bees abscond and swarm frequently, reducing colony holdings by beekeepers and increasing feral populations.

6. Very little is known about the pollination effectiveness of Africanized bees.

7. Africanized bees are likely to carry Varroa mites from Southern South America into U. S., Mexico and Central America.

It is hard to find a simple answer to all these questions. During 25 years in South America the Africanized honey bees have spread at the rate of 250-500 kilometers per year (150-300 miles). The bees become permanent residents and is not easy to develop a true eradication program, some control of colonies or swarms is often desirable but the general public and the beekeepers in particular <u>must</u> learn to live with Africanized bees in a short future.

Some American Universities are planning basic research on identification, behavior, physiology and mating biology. In this way, scientists say to Mexican Beekeepers and Authorities "the new findings could lead to new understanding of basic biology and in some way to control measures . . . ". By the way, the Mexican Government is funding an extensive public campaign informing the general public about the beekeeping industry's importance for trade and pollination activities, and stressing Universities to develop intermediate solutions to the problem. Fcq. J. Reyes O.

Calle 3 # 10 Apdo. Postal 95 Cordoba, Ver. 94500 Mexico

Dear Editor:

The Connecticut Beekeepers Association lead a multi-year fight to restrict the use of methyl paration (Penncap-M) in the state, and 1986 was the first full year the new restrictions were in effect. In early March, the Connecticut Agricultural Experiment Station issued the following release:

The Connecticut Agricultural Experiment Station in New Haven has reported that pesticides were found in only **one sample** of bees during 1986.

Dr. John F. Anderson, Chief Entomologist, said that "the station received 11 batches of bees suspected of being killed by insecticides in 1986, but laboratory analyses ruled out pesticides as the cause in 10 cases." Small quantities of kelthane (miticide), a pesticide considered relatively non-hazardous to honey bees was found in one batch, according to Anderson.

The Station has been investigating the effects of insecticides on



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STRONGER & MORE DURABLE than wooden frames. Frame can be used again and again for years.
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118-23 83rd Ave., Kew Gardens, NY 11415 Simon Foundation Patent #US 4261068 • Canada 152384 • Mexico 185971 bee colonies in the state for several years. Anderson said that between May 1983 and November 1985, the Experiment Station had confirmed the presence of eight pesticides in dead honey bees and brood comb from 55 apiaries. More than one pesticide was often present in a sample. Methyl parathion (Penncap-M), was involved in 34 and carbaryl (Sevin) in 33 of the 55 cases, Anderson said.

"Beekeepers have been anxious to send dead bees to the Experiment Station to learn if pesticides were involved," Anderson said. "The low number of suspected cases in 1986 is probably due to an actual reduction of incidence of poisoning."

"A greater awareness of the potential problem on the part of beekeepers and pesticide applicators, and restrictions by the Department of Environmental Protection on the use of encapsulated methyl parathion (Penncap-M) are probably responsible for the drastic reduction in confirmed cases in 1986," he said.

"Although Sevin was probably used extensively from the ground against the gypsy moth in southeastern Connecticut, as well as on sweet corn," Anderson said, "The Experiment Station has no evidence that this spraying had a detrimental effect on bees during 1986".

> Larry Connor Cheshire, CT

Dear Editor:

A suggestion to beekeepers that have colonies in a location other than their garden. Bees, at certain times of the year, present a problem in a small garden in town. If you want neighbors to talk to you, especially after you have inspected the bees, follow this suggestion which has worked for me for 40 years.

As soon as your colony seems to get to populous, check on the number of frames of brood. Take anything over 6 frames of brood out and place it in your outyard. There is no need pollinating the whole neighborhood.

I have 100 raspberry plants, cucumbers and the usual garden crops and a small colony pollinates it very well.

I can go through a colony that size nearly anytime without smoke or incident.

Andrew Malyk 458 E. Beck St. Columbus, OH 43206

Dear Editor:

A method of removing the attendant bees from the queen — It is a good idea to take the attendant bees *Continued on Next Page*

GLEANINGS IN BEE CULTURE

CAUCASIAN, MIDNITE or STARLINE QUEENS NORTH AMERICAN PRICES

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DOUBLE

	CAUCASIAN	MIDNITE	STARLINE	HYBRID
QUEEN PRICES	QUEENS	QUEENS	QUEENS	QUEENS
1-10		\$8.00	\$8.00	\$8.00
11-39	\$6.85	\$7.45	\$7.45	\$7.45
40-99		\$7.00	\$7.00	\$7.00
100-up	\$6.00	\$6.60	\$6.60	\$6.60

For clipping and/or marking, add 50¢ per queen. All queens are shipped priority mail. We can usually ship queens from about March thru October. Prompt shipment on all summer and fall queen orders. Prices subject to change without notice.

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11-39		\$28.25	\$22.85	\$28.85
40-99		\$27.00	\$21.60	\$27.60
100-up	\$19.85	\$25.85	\$20.45	\$26.45

We do not guarantee live arrival of package bees. In case of loss or damage enroute it is the buyer's responsibility to file the claim at his post office and collect the insurance. If you buy as many as a pickup load it will pay you to haul your own. Prices subject to change without notice.



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out of the queen shipping cage before you install the queen into a queenless hive. If you do not remove these bees there is a chance the bees in the hive will fight these bees when they are released, and end up killing the new queen too.

An easy way to separate the attendant bees in the cage from the queen, before you install the queen into a new hive is as follows:

Lift a staple that holds the screen from one end of the queen cage, the end opposite that containing the candy, (but save it to put back later) hold down the screen with your finger while you perform the next step. Put a strong rubber band on your right wrist (or left if lefthanded). Now, holding the queen cage in the hand with the rubber band, put queen cage, hand and all into a clear plastic bag about one gallon size. With the rubber band, close the top of the bag around your wrist.

With your hand in the bag, release all of the bees, including the queen, from the cage. At this point, if all of the workers go out and the queen remains in the cage, close the screen, (Carefully!), so as not to injure the queen and you are home free! Then just remove your hand, holding the cage closed, and shake all the worker bees outside. Replace the staple to hold the screen down, and the queen is ready to put into a queenless hive.

If the queen should get out of the cage with the workers, not to worry! Isolate her in a small part of the plastic bag, twisting to form a small bubble. Holding the queen in this small plastic bubble with the other hand, release all of the worker bees out of doors, by pulling the plastic bag off of your hand. Then, slip your hand back into the plastic bag, keeping the queen confined in the small bubble, until you get the bag fastened around your wrist again. Then release her from the bubble, and with the screen raised, coax her into the cage again. Be very careful.

You may think this a good way to get stung, but for all the times I have done this I have yet to be even threatened by any of the bees. They are so busy trying to get out through the sides of the bag they are not interested in my hand. Also, this plastic bag system works very well for clipping and marking the queen too. When you have her in the plastic bag, make a small hole over her with a small scissors, through which you can apply the paint. The plastic holds her snug, with no pressure points that could injure her. Also you could clip her wing, by just slipping the scissors through the plastic and over her wing

and clipping. This is all very gentle and easy.

Gerald Cosgriff P. O. Box 269 Libby, Montana 59923

Dear Editor:

U.S. Congressman Don Pease (D-Ohio) quickly responded to my letter suggesting he lead the swarm to select the honey bee as our national insect. Although he personally favors the idea, he says he and his colleagues are so inundated with these kinds of requests that he, as a policy, does not cosponsor any such bills. He suggests taking action on a state level to create more interest. Sort of like Spring build-up, I guess.

Part 2. A week or so after his first response he sent me another letter informing me that he has cosponsored the National Observancy Advisory Act which would establish a commission to advise the President on proposals for national observances. If this bill passes it will set up a commission whose sole function is to review proposals, streamlining the process and probably ensuring impartial review.

The system looks like a good one and I would urge others to write to their representatives in Washington and express their interest for this act. *Continued on Page 272*

Rapid, Precise Identification of Africanized Honey Bees

By MAGGIE GARSIDE

Reprinted with permission from: CHROMATOGRAPHY, Brownlee Labs

THE SPREAD OF 'KILLER BEES'

African honey bees were introduced into Brazil in the 1950's. In the intervening decades, the African bees have hybridized with the preceding European strains to produce the strain commonly called "Africanized" bees.

"Africanized" bees are more aggressive than their European counterparts, and have gradually spread northward through South and into Central America, displacing the more docile European strain in the process.

"Killer bees" may have been the source of considerable humor on "Saturday Night Live", but the fact is that they represent a serious threat to North American apiculture¹. The "Africanized" bees are considerably more difficult to handle than their European forebears. Testimony to the seriousness of the threat is borne by the scale of effort expended to eradicate the descendants of a colony of "Africanized" honey bees discovered last year in a southern California oilfield²⁴.

The difficulty of effective control is increased by the fact that "Africanized" bees are almost impossible to distinguish from their less aggressive European cousins by visual examination of morphology. All too often, this means that all hives in an affected region must be destroyed in order to ensure eradication of the aggressive "Africanized" bees. There exists a clear need for a rapid, simple technique that can unequivocally identify "Africanized" colonies.

IDENTIFICATION OF "AFRICANIZED" STRAINS

In principle, the identification problem is not difficult. The metabolic pathways of the two strains of bees differ sufficiently to allow identification on the basis of the relative abundances of hydrocarbons extracted from the bees themselves⁵. It has been suggested that a more straightforward identification might be made on the basis of the composition of the honey comb wax.

Beeswax consists of a mixture of

odd-numbered paraffins in the C20-C30 range (approximately), long chain mono- and diesters, and various free alcohols and fatty acids⁶. Analysis of paraffins from beeswax would be expected to parallel the analysis of paraffins extracted directly from the bees. The analysis of fatty acid esters, however, might be expected to show more variety, and hence provide more reliable differentiation between strains.

In practice, the situation has been more complex. Because the esters in question are relatively high in molecular weight (typically from C36 to C50 or so for the monoesters to perhaps as high as C70 for the diesters) GC analysis has ranged difficult from (monoesters) to impossible (diesters). HPLC has been suggested as a possible alternative, but does not provide sufficient resolution and lacks the required sensitivity for the analysis of theseweakly chromophoric species.

SUPERCRITICAL FLUID CHROMATOGRAPHY

SFC, on the other hand, significantly extends the working molecular weight range of capillary GC columns while exploiting the sensitivity of the flame ionization detector. Whereas GC separations are based exclusively on sample/stationary phase interactions (the mobile phase is essentially an inert "carrier"), SFC adds solvation by the mobile phase to allow chromatography of less volatile components at "reasonable" temperatures.

A "fingerprint" of fatty acid mono- or diesters obtained on a Brownlee SFC-One System, for example, provides an unequivocal identification of "Africanized" and European honey bees (Figures 1 and 4).

Sample preparation is straightforward: small samples of wax are dissolved in hexane and prefractionated by silica gel chromatography on small columns (approximately 0.5 cm bed length' packed in Pasteur pipettes. The total time required for a single identification is less than 1 hour (including extraction time!).

The monoester separation (Figure 4) shows some differences in the overall distribution of esters, with the "Africanized" bees producing relatively more large esters. The "fronting" observed on the peaks is the result of partial separation of the saturated and unsaturated esters.

The diester separation (Figure 1) is more distinctive. Both the overall size distribution and the ratio of saturated to unsaturated esters in various peaks differ significantly between the "Africanized" and European waxes.

In contrast to Gas Chroma-Continued on Next Page



Figure 1. SFC identification of honeybee strains on the basis of fatty acid diester composition of beeswax. SFC provides a complete separation on the basis of carbon number. Each carbon number is partially resolved into saturated and unsaturated acids. Because only a "fingerprint" is required, no attempt has been made to determine the actual carbon numbers. Note especially the saturated/unsaturated ratios in the 4th peak.



Figure 4. SFC identification of honeybee strains on the basis of fatty acid monoester composition of beeswax. SFC provides a complete separation on the basis of carbon number. Each carbon number is partially resolved into saturated and unsaturated acids Because only a "fingerprint" is required, no attempt has been made to determine the actual carbon numbers.

tography, where temperature programming is used to allow the analysis of a wide range of compounds in a single run, and to HPLC where solvent programming is used for the same purpose, SFC makes use of pressure programming. As the sys-

tem pressure is increased, the density (and hence the eluting power) of the mobile phase is increased proportionally.

A few caveats: The separations shown here are preliminary, and the differences between "Africanized"

and European hive waxes are based on a limited number of samples. In addition, the wax composition may be misleading when a new colony takes over an abandoned hive. Because the new bees "recycle" old honey comb, it may take some time for the wax composition to "catch up" with the body chemistry of the current occupants.§

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Mailbox...Cont. from Page 269

You might also underline the importance of their responding to their constituency if you explain to them how we <u>re-queen</u> a hive!

Clyde E. Witt 3541 E. Smith Rd. Medina, Ohio 44256

Dear Editor:

Have you ever been called to pick up a swarm and the people who called you said, "It's a great big swarm, big as a bushel basket and is low down, just barely over your head?"

And when you got there that sonof-a-gun has shrunk to a football in size and has somehow managed to get up at least 20 feet or more into the tree!

To those people who are afraid of bees it would probably look that big in their eyes and anywhere it is in the tree, it's too close for comfort to them.

I have my name down at the Police and Fire Department as one who is willing to quickly pick up outside swarms. Most of the swarms I get are for friends who will leave empty hives with me for that purpose. If I hive them in my own equipment I usually keep them. A lot of times you'll get a swarm and it's really not worth the trouble, unless you unite it with another swarm. Last year I captured a small swarm the 15th of May in a full depth hive body having foundation. I was intending to unite it with another hive which could use the extra bees. Before I could unite them I got another swarm the 21st. It wasn't big enough to much more than build up sufficiently strong to pull through the coming winter, and not wanting to increase my hive numbers, I decided to shake swarm the two swarms together. I first went in and found both queens. Setting the best queen aside I pinched the head off the other then I put down an old sheet in front of the older hive. Then I took 3 or 4 frames of bees and brood from the older hive which has now become the parent hive and shook them on the sheet in front of their hive. Then I took the other swarm and shook them on top of the



other bees. In about 10 or 15 minutes they have all marched into the hive together, no fighting because they are all so confused and disoriented to fight. Well, wouldn't you know! About 5 or 6 days later, I got another call and picked up the best swarm of the three, so I took them down to the farm and checked the queen. She was a young one and I put her in a 4frame nuc, to have one on hand if needed, later on in the season. I then proceeded to shake those bees in as I described in the above inst paragraph. Boy! that was a pretty good box of bees, and as the black locust was blooming I put on an excluder and a couple of boxes for comb honey. I did pour a small jar of honey over the frames. I always pour honey over the frames when I'm hiving a swarm. It seems that they go in better and I've never had one abscond.

Shaking those bees together is the best method I've found for uniting. They just march right in, no fighting and go right to work. Those little swarms would have had trouble surviving by themselves but instead brought in 80 pounds of comb honey and 100 pounds of extracted honey.

After I took the honey off, I put on a full depth box of older drawn comb which they filled up for winter stores. Not bad realizing a profit of \$2.20 and \$1.10 per pound respectively.

So fellow beekeepers, don't overlook or pass up those small swarms — unite them!

We people can take a good lesson from this also, for united, we can accomplish much more than we can single-handedly. United, we make great strides. Single-handed, we may falter by the wayside.

John F. Klenk 6906 W. 77th Terrace Overland Park, KS 66204

Dear Editor:

When I read the Inner Cover last month (April, 1987) it pulls at me in two directions.

First, the writer was interested enough to write, and second, he (or she) was completely ignorant of the facts (relying strictly on hearsay or misinformation).

It's a typical reaction which I have trouble getting used to.

But the really troubling part of the issue is when I realize that this person has a better knowledge of the issue than your typical congressman, who will vote, up or down, on this industry.

> John E. White 31 N. Preston ST. Centerburg, Ohio 43011

GLEANINGS IN BEE CULTURE



Q. If the thinnest man-made foundation is about 100 times as thick as that made by bees, wouldn't we produce better comb honey by using strips of foundation instead of full sheets in the rounds?

Clarence H. Bopp Kirkwood, MO

A. The bees do not simply build cells upon the foundation, but literally draw it out. If foundation that has been color tinted is given to them, it will be found that the color is carried into the cell walls. The thickness of the foundation in the finished, drawn out comb is thus not directly related to the thickness of the foundation with which one begins. When I have used starter strips in my section boxes I have not noticed any differences in the finished product. How well, and to what thinness, the bees draw out foundation is related more to temperature than to the thickness of the foundation, and comb honey should accordingly be produced during the warmer months. Comb honey from all flows is apt to be very waxy.

Q. How often should brood chamber combs be replaced with foundation? If the bees varnish the cells after each generation of brood, don't the cells, and also the bees, get smaller and smaller?

Mike Bennett Seattle, WA

A. It is not necessary to ever exchange old but undamaged combs for foundation, and some successful beekeepers never do. But there is experimental evidence that honey production is improved by replacing one or two combs each year after they have become old and black and thus, presumably, slightly reduce the size of the adult bees. Actually doing this is not so simple, however, since these combs will have brood and honey in them. A good procedure would be to do this exchange just before swarming season starts, putting the new foundation in the center of the brood nest. Nine or ten old combs from different hives can then be put under a weak colony, using a queen excluder, until the brood all hatches.

Q. When you shook swarm for comb honey, is there any reason why you have to run the old queen in with the swarm? Couldn't you just run a new queen in?

John D. Bacon Auburn, Michigan

A. Mr. Bacon, who raised this question, seems to have provided the answer too, for on two different occasions he released a new queen right from the mailing cage into the shook swarm and, the next week, found eggs in the combs.

Q. If you gather a stray swarm into a box or screened cage, how long can it be kept in the box before being hived?

Mason Gile Savannah, NY

A. Any swarm can be gathered into a screened box, either by shaking the bees off into the box or trimming off the branch and placing the cluster, branch and all, into the box. The swarm can then be hived at the apiarist's convenience. This should be done within two or three days, the bees meanwhile being kept in a cool place. If a longer postponement is necessary, due to weather or whatever, then the bees <u>must</u> be fed sugar syrup. If stored in the dark they will begin to build combs almost at once.

Q. How do you store mail order queens that cannot be introduced to the hives right away?

Brian Hardie Kokomo, Indiana

A. The queens, with attendant workers, can be kept in their cages for several days provided they do not get dried out. Keep them out of the sun and keep a damp paper towel over them, or touch a drop of water to the cage once or twice a day. I have kept queens a week this way. Longer might be possible. If you need to store them longer you can keep them, several cages at a time, in a queenless nuc. In either case you may need to replenish the candy in the cages. Do this by mixing a bit of honey with powdered sugar and kneading it to a stiff little ball and stuff this into the candy end of the cage.

Q. I have colonies four to six supers high that I want to reduce to one and a half stories. When is the best time to do this? And should I shake the bees from the extra combs in front of the parent hive?

Marshall T. Slotterbach Sellerville, PA

A. If the object is to crowd the colonies down for comb honey production, then it should be done in May, when the dandelions are in full bloom. Try to keep the combs with the <u>sealed</u> brood with the parent hive. If the resulting colony is good and strong, it will not be necessary to shake bees from the extra combs.

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Q. Six colonies of bees were given to me last fall. They had not been taken care of for a long time and some were even tipped over. I put a new hive body with frames of foundation under each one, and my next step will be to transfer the old combs to new hive bodies. When will be the best time to do that?

Arthur Dross Goshen, NY

A. It was a mistake, but not a serious one, to put frames of foundation <u>under</u> those colonies, because bees build from the ceiling down rather than from the floor up. The foundation will probably be undrawn and broken come spring. Pick a warm day in early May to transfer the old combs to new equipment, then give the bees supers of foundation on top rather than below.

Q. If you divide a two-story colony, requeen the half that is moved, and then reunite the two stories in the fall, how can you be sure that the new queen will be the one that survives and winters over?

Cordy D. Cooke Roslyn, WA

A. The only way to be certain is to destroy the old queen before reuniting the two halves, but if you want to spare yourself that job, there is a belief among beekeepers that the younger queen is usually the one that survives, and also, that the queen in the top story is more likely to survive. So put the half with the younger queen on top of the other half when you reunite the two, and cross your fingers. **Q.** I want to requeen my hive of German black bees using a nuc and the newspaper method. Will they accept a new queen, and will the bees destroy the old queen?

> C. Aquilina Island of Malta

A. There is no special problem in introducing queens to colonies of a different race. Africanized bees, for example, will accept an Italian queen, if proper precautions are taken, and I am sure the same will hold for black bees. But you must destroy the old queen, and any queen cells, first. If the queen is introduced in a nucleus colony of, say, three combs, then she must have begun laying, and at least one of the combs should have developing brood in the cells. Those three combs can then be inserted together into the hive, preferably at the side rather than into the center, without using newspaper and with very little smoke. The bees will almost certainly mingle peacefully, especially if there is a honey flow in progress.

Q. Is wax foundation preferable to plastic?

John Schildhauer Homestead, FL

A. Personally, I have a strong aversion to plastic foundation of any kind, though I have known beekeepers who use it. I believe there is no way of improving upon pure beeswax foundation.

Questions and comments are welcomed. Address: Dr. Richard Taylor, R. D. 3, Trumansburg, NY 14886, enclosing a stamped envelope. IRISH BEEKEEPING Read An Beachaire (The Irish Beekeeper) Published monthly. Subscription \$10.00/year, post free.

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THE BEE SPECIALIST

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

L uring swarms to empty containers is a way of life for beekeepers in many countries, especially those in Africa. And as Africanized swarms move ever closer to the United States, interest in collecting them in "bait" hives or boxes increases.

In 1980, Dr. Michael Burgett wrote a note in *Bee World* about the use of lemon balm (*Melissa* officinalis) for attracting honey bee swarms. He found that the use of balm leaves to rub the inside of hives was known and reported in England at least as early as 1629. Virgil, the Roman author, also wrote much earlier of using crushed balm to attract swarms to a chosen spot.

Balm is a pretty, glossy-green plant with whitish blooms and aromatic foliage. The flowers are attractive to bees. It is a Mediterranean native and easy to grow in this country. I grew it in Illinois just to see what it looked like. Seeds are available from the Park Seed Company, Greenwood, SC 29647-0001 and from many other companies. The oil extracted from balm plants is available from companies that deal in extracts and flavorings, but is usually sold only in large quantities.

In his article, Burgett compared the chemical makeup of oil of balm with that of the honey bee's Nasonov (scent) gland to see why the oil exerts its attraction. The oil has at least 23 different volatile components, several of which are identical to those secreted by the bee. Both the oil and the scent pheromone contain citral and geraniol. About 61% of the oil is made up of the two isomers, geranial and neral, that together are defined as citral. The extracted oil also contains nerol; the bee's scent gland has nerolic acid.

A number of bee researchers have tested the attractiveness of oil of

"Bait hives can work for swarms, but there's a catch"

melissa (balm), including Prof. Martin Lindauer in Germany. He concluded, after a very modest experiment, that it was not effective. The other reports are mixed, some favorable, others not, according to Dr. Burgett. However, we know that recent research with chemical lures, including some of the compounds in balm oil, has found very attractive mixtures for drawing swarms.

If we are seriously interested in catching those Africanized swarms in bait hives, we need to know the best combination of attractants to lure the



greatest numbers. These could include such things as comb, beeswax, propolis, queen scent, and scent gland odor. We might also consider the possibility that some items could repel swarms, such as the odors of fresh pine wood, paints, tapes, solvents, and preservative materials.

Recently, P. K. Visscher and colleagues reported on tests to learn swarms whether were more attracted to sites previously occupied by bees than to those without earlier occupation. They compared cubical boxes, two at each of eight sites, with and without traces of comb and propolis on the inside walls. They put a small piece of old, dark comb (16 square inches) into each previouslyinhabited box. In all, 10 swarms moved into boxes with combs and only 5 without, showing considerable preference for the comb and the previously-occupied boxes. The

authors discussed the unanswered question of whether the selection of the boxes by swarms is based on recognition of potential sites because of their odor, or an evolved selection of sites that favor success in nesting and, thus, survival of the swarm.

In 1980, I did a series of experiments with "artificial" swarms that were offered a selection of 12 hives in a very large circle around their clustering site. Initially, each of the hives contained five used, empty combs. Nine of the hives also contained pure oil of balm, or 10:1 and 100:1 dilutions with pure mineral oil. The check hives had only mineral oil. The oil mixtures were applied to blotting paper held within a small, open vial taped in place on the inside wall of the hives. In seven of eight experiments, the swarm bees selected a hive containing the fragrant oil. In the single experiment in which the bees preferred the plain mineral oil, the swarm had problems and had even killed its queen. Overall, the bees in the experiments preferred those hives whose comb odor was augmented by that of the plant extract. They usually clustered very tightly on and around the vial containing the attractive odor.

In a final experiment of the season, I offered the bees 12 hives again, six with used combs, six without combs but with two different dilutions of oil of balm. The bees selected a hive with combs over those with the oil but without comb. I was perform unable additional to experiments, but can guess that the bees would usually prefer comb over the odor of balm, and the plant odor (no comb) over empty boxes without it. We may be using extracts of lemon balm in a few years to lure swarms of Africanized bees to bait boxes or hives in the United States.

> This brings up a question. Why Continued on Next Page



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would any one use odd-sized boxes to trap swarms when bait hives make it so simple to transfer the collected bees? If you want to go to a lot of extra work, or plan to be a fixed-comb beekeeper, fine. Otherwise, use bait hives, not bait boxes.

Another Side of Pollination

Beekeepers think most often of moving hives of bees to fields and orchards when the subject of pollination is brought up. But there is another side of pollination that sometimes uses bees, sometimes not. This is the sale and use of live pollen to set crops of seed, fruit and nuts on many species of plants. Last year, Ed Stover, associate editor of *The Goodfruit Grower*, wrote an interesting summary of the history of the pollen business in Washington state, where most or all of it is centered.

The sale of collected, live pollen began in Washington during the 1920's when the American Fruit Growers Company began to develop large blocks of land planted solidly to Red Delicious apples, a variety that is not self-fruitful but requires pollen from another variety to set fruit. Before that time, most orchards were planted to many different apple varieties. Pollination and fruit set were not problems. The American Fruit Growers soon found that their Delicious orchards were unproductive. The production manager of the company was Leo Antles, an entomologist by training, who began to look for the reason why the orchards were not bearing fruit. He found that some apples were produced around the edges of the blocks, seemingly where pollen was carried in on bees that had visited other varieties.

Antles began to develop methods that could be applied to flowers requiring cross pollination. In those days during the Great Depression, it was possible to start such a laborintensive business because people would work for as little as 10 cents an hour! Antles developed different ways to get the pollen into the flowers including hand application with brush or finger, pole and hand dusters, speed sprayers, and helicopters. He also put pollen into a device called a bee hive pollen insert so that bees would pick up pollen on their bodies as they left the hive. He even tried pollen bombs with fuses and black powder. Although it was probably the most exciting way to distribute pollen, the bomb is no longer used.

The live pollen is collected from the anthers (pollen-producing organs) of flowers picked shortly before they open. Within the state of Washington, all the work must be done in about a six-week period from late March to the middle of May. Picking crews also travel to other states, particularly California, where the job has expanded from the traditional crops of apples, pears, cherries and soft fruit. Now, they also work with pollens from almonds, pecans, pistachios, kiwi fruit, and Japanese and European plums. The pollen harvesting process serves also to thin the fruits for the growers.

Frank Owen and I decided to test the use of supplemental pollen in a 14year-old commercial orchard in Illinois that had never produced a decent crop. The first year, we were unable to obtain any pollen inserts, so we just put two colonies of bees per acre into the orchard at early bloom. No improvement over past years! The following year we provided pollen inserts and added pollen during the fruit bloom. The orchard set its first commercial-size crop since it was planted and the good results continued for several years until the trees were pulled out.

There are skeptics who have ridiculed the use of pollen inserts because it was difficult to show that the fruit set resulted from the pollen in the inserts. British researchers settled that problem by using a redfactor pollen that caused the stems of seedlings to show red color if their seed had been set by the experimental pollen in the inserts. There was no question but that the inserts did an acceptable job of setting fruit with the help of foraging bees.

There are now three companies that sell pollens in the state of Washington and all of them have their origin in the original Antles operation. They sell their pollens in the United States and overseas, and the demand appears to be expanding. All the companies are bullish on the future, and Antles Pollen reports gross revenues in "six figures". It seems as if both sides of the business, the bees and the pollens, will be of importance for a long time to come.

Try Beekeeping in Another Country?

Several months ago I read a small advertisement in *Progressive Farmer* about agricultural tours to Argentina at a reduced price. The address given was the Intergovernmental Committee for Migration in Washington, D. C. The 18-day tours begin at Buenos Aires, Argentina and come back from Rio de

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Janeiro after some sightseeing in Brazil. Participants visit farms, experiment stations, and markets, and see parcels of farm land that are for sale.

This committee has been providing assistance to immigrants and emigrants since 1952. It is primarily interested in North American farmers with capital who would like to consider emigrating to countries "with extraordinary land values where opportunities await". Current emphasis is on the countries of Argentina and Uruguay. According to the brochure, much of the population is of European origin, with Spanish heritage going back to the Conquistadores. Recent immigrant groups include Italians, Greeks, Central Europeans, Danes, English, Germans, and Dutch. Included in the efforts of the committee is an on-thejob farm training program for young farmers. Participants are placed on farms that specialize in their field of interest. There is a medical and accident insurance plan available.

Nothing is said about beekeeping in the literature I received from the organization. However, with such an active and long-standing program, they would surely offer help to United States citizens who are sincerely interested in the possibility of keeping bees in Argentina and Uruguay.

If you wonder why anyone might consider moving away from

the United States to keep bees, think about the uncertain future that is facing beekeeping in this country. It seems as if every political subdivision, from cities to the federal government, is preparing to impose restrictions on beekeepers aimed at trying to control the spread of Africanized bees. Sooner or later it will be Varroa mites, and we are still reeling from the unrealistic and punitive measures imposed in relation to tracheal mites.

These days it is difficult to find "new frontiers". Alaska is still a tough place to live, but the challenges are no longer there. But a move to a lessdeveloped country with a different language and many groups of people from other countries should qualify as a true challenge. The spirit of the other groups who had the courage to leave their homes would help to reinforce the newcomer from the United States. When I worked in the Yemen Arab Republic, I met a number of former residents of the Netherlands who have chosen to live away from that country. They are a great bunch of people, stimulating and fun to be around.

If you are interested in learning more about the program of the Intergovernmental Committee for Migration, I will be glad to send you their address. Although I cannot take advantage of one of their tours this year, I hope to visit the areas in the future to see what they have to offer beekeepers.§







NEWS RELEASE

The Montgomery County Beekeepers' Association has a very unique calendar available for 1987. The cover is in memory of Paul Cummins, who was instrumental in starting many young people in the hobby of beekeeping. Everyone who knew and loved Paul for his faithful support and dedication to the M.C.B.A. and the Pennsylvania State Association will surely want one of these calendars for their collection.

Information on hive maintenance, nectar and pollen producing plants, recipes for cooking with honey and the history of the M.C.B.A. are included in the calendar. It also contains the meeting dates for M.C.B.A., Bucks County Beekeepers' Association, and Delaware Valley College, as well as some of the Pennsylvania State Assoc. dates of interest to beekeepers across the state.

Price of the calendar is \$3.00 per copy plus \$.50 postage and handling. Checks should be made payable to M. C. B. A. and mailed to: M. C. B. A., 62 E. School St., Hatfield, PA 19440.§

UNDERSTANDING SWARMS

Colonies of all honey bees reproduce by division of the adult populations and migration of the daughter portions (swarms) to new nesting sites. Each swarm carries off the old queen from the parent colony, who is replaced by a new virgin queen reared shortly before or after swarming takes place. Under normal circum-stances, the old queen, 30-70% of the worker bees, and a similar percentage of drones leave the hive at about the time the first queen cell is capped. If the old queen cannot fly or is lost, the swarm will depart with the first virgin queen to emerge.

The spring of 1986 was a "good" season for swarming, with many beekeepers reporting multiple swarms. Just after noon on March 3, thousands of bees left our hive and swirled thickly through the air. covering a space of about 2,000 square yards. It would have been very impressive if it had not been so discouraging. It lasted only 15 minutes, then they all returned to the hive. The next day, we examined the hive and destroyed "all" the queen cells. We found our old marked queen, seemingly perfect, and have no idea why she didn't leave with the swarm. The weather turned bad and there were heavy rains every day of the next week. On March 9, six days after the attempted swarm, we found a fully developed but unmarked dead queen outside the hive. On March 10 we found a well developed queen pupa on the landing board, on March 13 our marked queen, on March 16 another young dead queen, and on March 17 the bees tried to swarm again but without success. The next day they swarmed to a neighbor's back yard. I caught two queens as they emerged from the entrance, but obviously missed at least one. In fact, I missed at least four - we found 3 queens (two dead) on the ground beneath the swarm when we captured it. On March 19 they swarmed again - and I caught six

queens as they emerged from the entrance! Later that afternoon, we found another dead queen outside the hive (are you keeping track of all these queens?). On March 20 I saw a queen poke her nose outside the entrance. She ran back in before I could catch her, but I caught another queen flying outside the hive. A small swarm issued and joined the cluster from the previous day (which we hadn't yet been able to retrieve). We again went back into the hive to tear down queen cells. There were 7 fully developed queens being held captive in their cells, so we removed and caged them. We found a piping queen on one frame, plus pupa and larvae in queen cells. The bees did not attempt to swarm again, but we continued to find ejected queens outside the hive from time to time. During the period March 3 - 24, we accounted for a total of 36 fully developed queens from this one hive - not counting queen cells we destroyed nor cells with undeveloped queens (pupae or larvae). On all three occasions the bees swarmed with multiple virgin queens; at least 6 with the first and 7 with the second. We have only kept bees for two years and are certainly not swarm experts. While I can't offer advice on swarm prevention, it is interesting to know what happens during a swarm.

UNDERSTANDING BEHAVIOR -

Understanding swarming behav-



By SHERRON M. BULL 7641 El Toro Circle La Palma, California 90623

ior will not prevent, or control, swarming - however, it will make you even more aware of the complexities of this insect. Probably all queen rearing depends to some degree on insufficient queen pheromones. It occurs more readily with some laying queens than with others, and with old rather than young queens. It does not appear to be caused by a poor output of eggs, nor by drone rearing due to an in-sufficiently fertilized queen. It coincides with peaks of worker and drone rearing, but not with peaks of average temperature or adult population, nor with peaks of nectar availability. Queen rearing is more likely in big rather than small colonies, and starts more often when worker brood is increasing than when decreasing. It does not depend upon a surplus of larval food, though it may be encouraged by it. If the old queen leaves or is killed and no young one has begun laying, the colony increases the number of queen cells by producing emergency cells, because queens that have not yet begun laying have only weak power to inhibit queen rearing.

When a colony grows too big, the bees at first pack closer together inside, but soon some begin to cluster outside. Increased density of bees in the hive can also occur in colonies that aren't too large for the nest. Young bees are strongly attracted to brood and become crowded together if they increase disproportionately to the brood, or the brood area shrinks because the queen stops laying. with high adult-bee Colonies congestion are likely to swarm; a shortage of brood space has supposedly little, if any, relevance. Adult-bee congestion encourages queen rearing, probably by hindering distribution of queen pheromones (the more bees, the less PPB — pheromones per bee). The more readily a colony rears queens, the less congestion is needed to make it swarm. If there is no congestion at all, swarming is unlikely before the first queens are ready to emerge from their cells.

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Because young bees have a tendency to remain in the warmest place, newly emerged bees remain on the brood combs while the older bees move out. Experiments have shown that bees up to 3 days old remain on the brood combs, while 4-10 day old bees are "displaced". These older bees do not move far; they remain on combs adjacent to the brood area and begin to clean cells. When the queen comes to such an area, she begins to lay immediately and the young displaced bees begin to feed her and the larvae. Therefore, the egg-laying activity of the queen is governed by the displaced nurse bees since she can lay only as many eggs as there are prepared cells. Egg laying increases during swarming season, and the queen must cover an ever increasing area searching for prepared cells in which to lay. Her retinue of nurse bees increases from the usual 10-12 to 22 or more, all constantly offering her food, and they become increasingly excited. The queen examines all the queen cups and lays eggs in them. After the queen cup eggs hatch, the nurse bees supply the larvae with an abundance of food; while the number of bees feeding the queen diminishes. The queen may continue to lay a few eggs each day up through the day of swarming, although her abdomen diminishes in size and she looses weight. The decrease in laying results in a further increase in the number of inactive and displaced nurse bees. About a week before the swarm leaves, the queen may be pushed about and treated roughly, which tends to keep her moving. Workers may even bite at her legs if she stops moving. The old queen may also begin piping.

WHEN A YOUNG QUEEN EMERGES —

When a young queen emerges in a colony after it has lost its laying queen by swarming or otherwise, several things may happen. Queens that are still in their cells may be killed. Or, they may be allowed to emerge where they will be attacked on the comb until only one queen remains. Or, the workers can keep the first queen that emerges from attacking the other queens by imprisoning the non-emerged queens in their cells. They add wax to the cappings as the queen tries to cut her way out, feed her, and generally delay her emergence. Queens held in their cells continue to mature, and they can pipe in response of the free queen. Colonies with piping queens readily swarm, even if they are very small and uncongested.

swarm Shortly before the emerges, both house bees and foragers engorge with honey. The searchers perform a special "whir" (Schwirrlauf) dance that seems to incite the bees to swarm. The searchers become very excited and run among the bees in zigzag running steps, vibrating their abdomens, and producing a perceptible whir with their wings. The whir dance is started by one or two bees, but the number of whirring bees rapidly increases until the whole hive is in tumult. The age of bees in a prime (first) swarm is mostly 4-23 days, although bees of all ages can be found in a swarm. The old mated queen accompanies the prime swarm, leaving the virgin as the new queen.

THE SWARM -

The swarm usually settles within about 50 yards of the hive to make certain the queen is present; if she is not, they will return to the hive. A settled swarm consists of two distinct parts; a quite compact outside shell about 3 bees thick, and an inner part consisting of loose chains connected with the shell in many points. The provides protection shell and strength and has a distinct entrance to the inside cluster. The searchers in a swarm are all at least 21 days old, the bees in the shell are 18-21 days, and those in the inner cluster are house bees up to 18 days. The bees in the shell constantly change places; during one 10-minute period it was found that 2/3 of the surface bees changed with those further inside.

Once the swarm is temporarily settled, the searchers resume dancing on the surface of the cluster. The scout bees of a swarming colony usually discover several different potential dwelling places, and each scout advertises in behalf of her own finding. The better the new site, the more vigorous the searcher's dance. Just like the profitability of a source of food, the quality of a potential nest is judged according to many factors protection from wind (most important), temperature relations, characteristics in respect to odors, size, and distance from the present colony (further rather than nearer). Continued on Next Page



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Understanding... Cont. from Page 279

Whether a feeble, lively, or strong dance is called for is decided after a thorough inspection of the discovered habitation. It is made on the basis of an inborn scale of evaluation, and is not dependent upon examination of competing habitations. Yet bees advertising with feeble dances for an dwelling may well be inferior induced by the strong dances of others to suspend their own dance, or they may be influenced to inspect the better sites and become converted to dancing for that location. A nesting site is inspected over and over again under different conditions before the verdict is reached, and searchers may stop advocating a site if it subsequently becomes less desirable.

THE NEW HOME -

If there are two or more equally desirable homes, several strong groups will be dancing. If the scouts cannot come to a unanimous consensus, the swarm will often build its nest where it has settled. Departure occurs only when all scouts are pointing to the same goal, thus the moment when the swarm will depart can be foretold, as well as the direction and distance that the swarm will fly. Normally in the

course of hours or days, agreement is reached as to the best choice of dwelling. Once the searchers agree on a place, they begin the whir dance within the cluster. When the excited running reaches its high point, 5-10 searchers simultaneously fly out of the cluster and in a few seconds the whole cluster disbands. The scout bees, who know the way, lead and assist in finding the new home, by flying tumultuously forward through the slowly proceeding swarm again and again, and then flying slowly back at the edge of the advancing cloud. As the swarm first starts towards the new home, they fly very slowly, about 1/2 mile per hour for the first 100 or so yards, apparently to insure that the queen is with them. But then they rapidly increase their speed to a maximum of 6.8 miles per hour. The flying mass occupies a space about 560 yards in diameter. They fly within 2-10 feet of the ground, in a straight line, and up and over (not around) obstacles. The searchers perform the whir dance at the new home once the swarm starts to occupy it. The queen enters the nest site after about 70% of the workers have entered - and there is one more honey bee colony in the world.§



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RESEARCH REVIEW

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

FIFRA may have the last word"

"Menthol

Menthol for the Control of Tracheal Mites

In my travels this spring in Florida and elsewhere, I have been very impressed with the number of people around the country talking about and experimenting with menthol to kill tracheal mites. I'm still not convinced that the mites are causing as much difficulty as some people suggest, but that is not the question I want to discuss here.

The idea that menthol, which is derived from mint, might kill Acarapis woodi was put forth in the paper by Vecchi and Giordani cited below; the work was done in the 1960's in Italy and at least one paper from the same laboratory using menthol predates the paper I list. Interestingly, a portion of the research was supported through U.S. Public Law 480. (This money became available when the U.S. sold grain to a number of countries that had no dollars and accepted local currency instead. This money could be spent in the country of origin and some of it has been used to support scientific research, including that on honey bees.) The paper below is in English and explains clearly what was done. In substance, the authors found that menthol, in a variety of formulations, was toxic to the tracheal mites (the cause of what has been called acarine "disease") when it was placed in a hive. Apparently menthol has no adverse effect on the bees. Little was said in this country about this method of control until the mites were first found in the U.S. in Texas, in 1984*.

Menthol, I am told, is available in both synthetic and natural forms. I am not aware of anyone testing or using the synthetic material. The natural form is refined from crude mint oil and has a very strong odor. The barrels of menthol I have seen are all from mainland China. I am told that most of this menthol flows into the cigarette, tooth paste and cough drop trades.

Drs. W. T. Wilson and J. O. Moffett of the USDA laboratory in Weslaco, Texas appear to have more experience with menthol than anyone else. They feel menthol has real value in treating acarine disease but at this stage they are not certain of the best method of application. Their first tests were conducted last May.

Menthol melts at 98°F which is above the brood barely nest temperature. Wilson and Moffett emphasize that both time and temperature are important in the use of menthol. When a packet of menthol was placed in the center of the brood nest, some brood and bees were killed; no brood kill occurred when the packets were outside of this warm area. It appears that placing packets of menthol on the bottomboard during warm weather may be the best method of application. Researchers in Weslaco are conducting tests with menthol there as well as in Mexico and Nebraska.

Drs. H. Shimanuki and E. Herbert, with the USDA laboratory in Beltsville, Maryland, have tests underway at the present time in New Jersey. Dr. H. L. Cromroy of the University of Florida is testing a number of materials, including menthol, for mite control. Most of his tests are being conducted in Florida but some are being done in California.

In Oregon, Dr. D. M. Burgett is testing crude peppermint oil that contains about 50% menthol. Oregon produces something in the vicinity of 99% of the mint oil produced in the U. S. Acarapis woodi has not yet been found in Oregon, Burgett says, so his tests are for the external honey bee mites, which he has found to be abundant in that state. Preliminary experiments were started last fall and more extensive trials are underway at present.

Is it Legal?

Is it legal to use menthol to treat tracheal mites? As a human foodstuff, is it exempt from pesticide regulations? Similar questions arose some years ago when benzaldehyde first came onto the market as a bee repellent. At that time it was ruled that any substance that was used to kill or repel an insect (or mite) was an insecticide when it was so used. The Pure Food and Drug Administration, for a short time, wanted us to perform toxicity data on benzaldehyde, which was widely

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Research ... Cont. from Page 281

used in the baking trade to flavor almond cookies; an exemption for its use by the beekeeping industry was finally made.

We did a computer search on menthol, which reveals there are nine pesticide product labels registered by the Environmental Protection Agency at present. Menthol is registered for use as a cat and/or dog repellent, in a sanitizer, in a disinfectant and as a deodorant. Menthol has an EPA ingredient code number (51601). This means that its use would come under the pesticide regulations of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) administered by EPA. Technically the use of menthol, both by beekeepers and researchers, is illegal without a 24C registration; each state is required to obtain a separate registration. However, I am aware that several beekeepers are already treating colonies in many parts of the country. I get differing advice on how much one should use so I don't dare give any figures. Hopefully some good data will be available by fall.

Searching the literature I found three references regarding the successful use of peppermint oil to

treat acarine disease in 1924 (Murrray 1924a, Murray 1924b and Welch 1924). Murray's method involved placing "a teaspoonful of the essential oil of peppermint on top of the cotton quilts". In England, quilts, when used, are placed on the top of the hive. Murray points out that the year in which the tests were run (1922) there had been an unusually good honey flow; Bailey (1963) has noted that a strong honey flow will do much to rid a colony of mites. In the fall Murray fed "some syrup as strongly pepperminted as they would take down".

Other entomologists have looked at extracts from the mints Mentha sp.) as regards their toxicity to



insects. Jacobson (1958) lists three papers in which mint extracts were checked for their toxicity to fruit flies. mosquitoes, cockroaches and milkweed bugs. All results were negative. Our search of the literature has not been very thorough. I have not found that anyone has attempted to determine the toxicity of menthol against any mites other than Acarapis woodi. I have no doubt that what is taking place in the beekeeping world will stimulate someone to do 50.8

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*EDITORS NOTE; A review of this paper and the results of the program will be published this fall in Gleanings in Bee Culture.

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SOME VIRTUES OF AFRICANIZED BEES

By ROGER MORSE • Cornell Univ. • Ithaca, NY 14853

Summary

The Africanized bees that are moving north have some bad qualities, the chief one being that they sting a great deal. However, they show a high degree of resistance to Varroa mites and American foulbrood. Tracheal mites have been reported in Africanized colonies in Brazil but no beekeepers here have ever been able to find any serious losses in colonies where they are present. Africanized workers develop in a shorter time than European workers, which gives them an advantage in building populations.

The Cornell-Brazil Program

Studies by a Cornell University research team in Brazil on Varroa jacobsoni, an introduced Asian honey bee parasitic mite, began in 1980 with a research grant from the National Science Foundation. Additional funds were obtained from both the Office of International Cooperative Development and the Agricultural Research Service, arms of the U.S. Department of Agriculture. The research is being conducted in the Genetics De-partment of the School of Medicine of the University of Sao Paulo in Brazil. The laboratory is located at the edge of the city of Ribeirao Preto about 200 miles inland in the state of Sao Paulo. Our program is conducted in cooperation with the Brazilians, who have also made a strong financial commitment to the study of this mite.

While our chief concern has been the mites, most of the work has been done with Africanized bees. As a result, we have become aware, as one might expect, that the Africanized bees have certain virtues. Dr. David De Jong, Cornell Research Associate, is in charge of our program in Brazil and has been living there since 1980. I, and many of my graduate students and associates, have made several visits to Brazil during the past several years.

Resistance to Varroa mites

It is now clear that the Africanized bees in Brazil have a high degree of resistance to varroa mites. In areas of Europe where the mites are established one finds about 80 mites per 100 adult worker bees; in Brazil, on Africanized bees, we find only three to five mites per 100 adult bees. None of the Brazilian beekeepers treats infested colonies for varroa mites. Still, at the present time we cannot find a single colony in Sao Paulo state that is not infested. In parts of Argentina and Europe where the mites are found and European bees are used, it is not possible to keep colonies alive without two chemical treatments a year, I am told. Camazine (1986) has found that at least in part this resistance is due to the fact that only about half of the mites that enter brood cells of Africanized bees actually reproduce, a much smaller fraction than for European bees. Also, worker Africanized bees develop from egg to adult in about 20 days (Camazine, 1986); European bees develop in 21 days. This difference, while it appears slight, is sufficient to prevent the development of many of the young Varroa. The resistance may involve other mechanisms as well.

Resistance to Other Diseases

American foulbrood has been reported from Argentina and Brazil in the past. However, Dr. De Jong, who served as a New York State

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apiary inspector for several summers and is thoroughly familiar with the disease, has told me he has *never* seen a case in Brazil. Tracheal mites were reported from Venezuela in 1957, Argentina in 1960, and Brazil in 1971 (Nixon 1982); however, no one in Brazil reports they are a problem anywhere, and no one treats bees for tracheal mites in Brazil. I saw several cases of European foulbrood when I first went to Brazil in 1972, but it is not a common disease there.

It appears that Africanized bees are better house cleaners than many other honey bee races, and rid their hives of the sick and dying rapidly. This, of course, is an excellent method for an animal to use to protect itself against contagious diseases. Other mechanisms for keeping their nests free of diseased bees may also exist.

A Shorter Development Time and Bee Populations

The shorter brood cycle of Africanized Bees (20 vs. 21 days) also means faster population buildup. Although the difference is only five per cent, it is an edge. In the spring it is usually our goal to grow large populations of bees in as short a time as possible. Colonies of Africanized bees build populations more rapidly than do their European counterparts, in the same apiary, at least in tropical and subtropical areas. Also, I have heard it said, though I know of no data, that Africanized queens will lay more eggs in a day than will European queens. It is generally agreed that Africanized honey bees are better suited to tropical climates.

There is no question that colonies of Africanized bees in Brazil build large populations and that they do so rapidly. As has been stated clearly by others, this ability to build big populations can be turned into increased honey production or a greater number of swarms (Bradbear and De Jong, 1985). Beekeepers that use Africanized bees must follow a careful management scheme or the bees will swarm excessively.

Africanized Bees as Experimental Animals

Many of the studies of Africanized bees that have been done have been concerned with their aggressiveness and with behaviors, such as absconding, swarming and foraging, that differ from those of European honey bees. However, many students have also investigated other aspects of Africanized bee

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behavior in Brazil with success that parallels that obtained using European honey bees. In 1978, and again in 1986, I gave a laboratory course in honey bee biology at the University of Sao Paulo that is similar to that offered at Cornell University each year. In Brazil we used Africanized bees. We use additional caution in manipulating colonies of Africanized bees but many of the operations are the same.

Natural and well-fed artificial swarms of Africanized honey bees can be manipulated in the same way that we handle swarms of European honey bees on the Cornell Campus. I have known of Brazilian beekeepers who have built bee beards using Africanized bees. Much of what has been written suggests that swarms of Africanized bees are always ag-gressive. *This is not true*. I have observed swarms in both central Africa and Brazil that are no different in their behavior from those in the United States, Under most circumstances the bees in natural swarms, wherever they are found, are engorged with honey. Such swarms have nothing to defend and may be disturbed, moved, manipulated and otherwise managed without difficulty. In brief, when handled with appropriate caution, Africanized bees make good experimental animals in a variety of circumstances, as do their European counterparts.

All this is not to say that I prefer Africanized bees over European bees. Africanized and African bees can be downright nasty. However, there is great variability among these bees in their aggressiveness; I have seen some colonies that are as manageable as our own bees. I am hopeful that this variability, and the advantages Africanized bees have, can be worked to our benefit when they arrive, which I believe they will do shortly. thinking about a breeding In program these positive traits should be kept in mind.§

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Why do Bees Swarm?

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

any years ago, when I was attending an American Beekeepers Federation meeting (where, I can't remember), а particular event happened that made it very interesting for me and for several others. They had what was called a "Hobby Beekeeper's Night". They ought to hold them more often, where a panel of about five "experts" sit behind a table and answer questions from the crowd. The only expert that I remember who was there was Roger Morse, but there were lots of experts in the audience, too. One in particular was M. Hydak, who was then professor of beekeeping at Minnesota.

At the time, I had been doing bee research for a number of years at the Baton Rouge bee laboratory of the USDA. I had received my degree studying under Dr. C. L. Farrar at Univ. of Wisconsin, and had three years of commercial beekeeping. So, when I stuck up my hand to ask a question, I already knew that no one would know the answer. Furthermore, I knew that my question would get a really hot discussion going. Fortunately for me, nobody in the room knew who I was except for Dr. Morse; and as soon as I asked the question I could see from the look on his face that he knew what a stunt I was pulling. He wasn't about to get trapped. So, what was the question?

"Why do bees swarm," I asked in all innocence.

So, the first guy stood up, took a big breath, puffed out his chest and proceeded to come up with what he thought was the answer. Then, after a rather long talk on his part, he sat down and I stood up to reply.

"Sir, thank you very much; you have just told me how to control or stop swarming. You have not told me what *makes* bees swarm."

Well, the guy got mad and started yelling at me. Two or three

"Why do bees swarm? I asked in all innocence."

others wanted to get into the discussion; and, all of them ended up explaining either how to stop or control swarming, or came up with the old junk about crowding, springtime and natural method of reproduction of bees, etc., etc.

I had caused enough damage and didn't pursue it further, but it sure got Dr. Morse interested. He and his students have been pecking away at this most beautiful bee problem for many years. Because of his research, done mostly at Cornell University, we now know a little bit more about the causes of swarming, but really not very much.

Why all the fuss; is it all a question of semantics on my part? I don't think so, because what I would like to see is a series of experiments, or treatments, which would force the bees to swarm. And, of course, you can't have these experiments conducted during any part of the year when normal reproductive swarms occur. Some day, someone will do it.

Let's look at some of the "general" facts so that you can see how complicated it is. These statements are all generalities, and many exceptions to them can be found. Bees don't swarm as much today as they did forty years ago. Bees in the southern tier of states, such as South Carolina, Louisiana, Arizona and California, all where I have kept bees, don't swarm nearly as much as in the Northern tier, such as other states where I have kept bees, like New York, Wisconsin and Ohio. And, most peculiar of all were the swarms that occurred in the late summer or early fall in upstate New York when the buckwheat was yielding lots of honey.

Upstate New York has very severe winters. On occasion, check your newspaper's maximum and minimum temperatures for Buffalo, Rochester and Syracuse. Why, then, if bees are so smart, would they know to cast a reproductive swarm on September 1 and only when buckwheat, *Fagopyrum esculentum*, blooms? Buckwheat must be the answer. There has to be something in the pollen or nectar of certain plants that sets the key turning in the swarm lock.

Let me present a somewhat similar, and perhaps parallel analogy. During the 40's and 50's, many people in the Arizona wildlife field were concerned about the survival of quail in the state, and severely limited the hunting of that beautiful bird. Then, some research was done. It was discovered that quail populations



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were **absolutely** dependent on rainfall in the desert, particularly during late winter and spring.

When there was adequate rain, green things would grow in abundance, quail would eat the forage and become sexually active. Females would ovulate and the eggs would get fertilized. Egg clutches would be as large as eighteen, and it could even happen a second time during the year. But, if the green forage was limited, the female quail would produce either few or no eggs.

Further experiments, done here in California, actually identified the chemical compound in the green forage that caused increased sexual activity in the quail.

Okay, my hypothesis as to why bees swarm is as follows. Our bees come from Europe, mostly with some admixture of genes from Africa and Asia. What are the bee-visited-plants that grow there, and that evolved with honey bees, that flower at the same time bees swarm? The answer has to be there. When does buckwheat bloom where it is native? In the spring. Look how logical the nature of swarming is, most of the time. You can list the things in your particular location; but, for now, let's look at the Baton Rouge area of Louisiana. Spring comes pretty fast, with lots of willows, berries and some mustards, maples and other minor plants blooming in profusion. Then white clover starts to yield about April 15 and continues until it dries up, about June 15. The honey flow is mostly from white clover, and it is heavy. Most of the swarming is centered around the April 15 starting date of the honey flow. It does not occur on March 15, nor are there many reproductive swarms after June 1.

I bet it's the same in your area. The most intense swarming time for your bees is about seven days before the beginning of the honey flow, to about two weeks into the honey flow. Nature timed it perfectly. Make the swarms issue when it will be possible (usually) for the bees to recover from their split, build their combs, store enough food and develop a population of bees that can survive the rigors of Northern climes.

The farmers in upstate New York used to plant buckwheat about July 1 when, for some reason, another planted crop had failed to make a good stand. Buckwheat is such a fast maturing plant that it can be planted at that date and make a crop, just two short months; but, its chemistry turns things upside down for the bees, and makes them swarm at the worst possible time of the year.§





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Testing Your Beekeeping Knowledge

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

in addition to Beekeepers, managing their own colonies, often find themselves in situations where they are expected to be the local beekeeping expert, serve in various capacities in several beekeeping associations and teach others the art of beekeeping. To be an effective teacher, it is important to disseminate accurate information, in a clear, concise manner. When working with beginners, it is necessary for them to realize that they have a great deal of flexibility since there is not one correct way of keeping bees.

One of the first topics covered in a beginners short course is often entitled "Getting Started in Beekeeping" and is concerned with basic beekeeping equipment, ways of obtaining bees, and how to manage newly established colonies. Please take a few minutes and answer the following questions to determine how well you understand beekeeping basics.

The first five 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.____ The bottom board or floor of the hive should be level, so the bees will produce nice straight combs.
- 2. ____ The interior of the hive should not be painted.
- 3. _ _When burr comb is built between supers and connects the top bars of one super with the bottom bars of another, it is an indication that the hive has too much ventilation.
- 4. _ Migratory lids are normally used without inner covers.
- 5. ____ Frames within the hive hang at right angles to the entrance and parallel to the length of the hive body.

Multiple Choice Questions

- ___ Most common source of lumber used in hive construction is: A) Cyprus; B) Cedar; C) Spruce; D) Pine; E) Redwood 7. ____Hive bodies used in the
 - section comb production of honey have an overall depth of inches. A) 9-5/8"; B)5-11/16";

C) 4-5/8"; D)S 7-5/8": E) 6-5/8'

8. _____ The standard Langstroth moveable frame hive is designed to hold _____ self-spacing frames, even though many beekeepers use one or two less after the combs are drawn out. A) 8; B) 10;

C)9; D)11; E12

- 9. Reversible bottom boards provide hive entrances of: (2 points) A) 1 inch; B) 7/8 inch; C) 1/2 inch; D 3/8 inch; E) 3/4 inch
- 10. What is the primary reason why apiary laws within each state will not allow bees to be kept in straw skeps or log hives? (1 point)
- 11. Please explain why hives are normally painted with light colors rather than dark colors. (2 points)
- 12. Please explain why installing a primary swarm on comb foundation is considered to be an excellent way of drawing foundation. (1 point)
- 13. Describe the function of the following items: (3 points) Follower or dummy boards

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14. What are three advantages of top supering over bottom supering? (3 points)







n March 7 it turned balmy warm here, before becoming bitter cold again two days later. Today (March 24) it has turned warm again, but we are told that this, too, is not going to last. On that first warm day much of the snow was suddenly replaced by mud, and I headed off with great exuberance to look at one of my apiaries, not to do any work, but just to see how the bees had come through the winter. It was the kind of day that intoxicates a beekeeper, or anyone who lives close to nature. I passed a friend's sugar shack, saw clouds of steam rising, so stopped to put in my order for a gallon of maple syrup. The sap was flowing copiously, and his spirits were as high as mine. I got to my apiary and strolled among the hives, watching the bees, suddenly liberated from their long winter confinement, riotously filling the air. Every colony had survived, as I had expected, even though I had fed them not a drop of sugar syrup last fall, it being my policy never to feed bees except in rare cases of emergency. My infant son, not yet walking, watched the bees with me. I was sure that the bees, happy like myself, would not sting either of us, and I was right. It was the kind of moment that makes one feel his blessings, when one feels doubly blessed by being a keeper of bees, raising up in imagination the good things yet to come before another winter shuts them down again.

Now I've got to get my honey house straightened out and begin preparing supers. I should have done this before, but I tend to put things off. As the things of the world should be enjoyed without our becoming slaves to them, so it is with time. There is lots of it, but never quite enough, and it should not be wasted in fretting and worrying.

Because my bees still have plenty

BEE TALK

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

"It is clear that there is no "right" answer to the question of using queen excluders"

of honey in the tops of their hives in the spring, I do not need to worry about feeding them, nor do I need to use queen excluders. The honey itself is a barrier to the queen. And this reflection raises in my mind the whole question of excluders, a subject that is hotly debated by beekeepers and never resolved. I shall now offer my ideas on that subject.

It is clear, first of all, that there is no right answer to the question whether excluders should be used. It depends in part on where you live. There are regions, such as Maryland and on down to the Carolinas, where beekeepers get a good honey flow from the tulip poplars early in the season and then almost no honey flow at all for weeks afterwards. Good beekeepers there have told me that they could not get crops without using excluders. And even in such primary honey regions as Wisconsin there are beekeepers whose special systems of management absolutely require excluders. We cannot go into all these matters, of course, but it will be worthwhile to get before us certain facts about excluders and how they work.

It is, for example, doubtful that the excluder is in any significant way an obstruction to the passage of the bees in and out of the supers. The fact

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that bees often confine their activity to the hive below the excluder, ignoring the combs above, is quite naturally interpreted by beekeepers as indicating that the excluder is an obstruction, but that is an error. What the excluder does is force the colony to keep its brood nest below, by keeping the queen down there. And where the brood nest is located is what determines where the honey will be stored, at least to begin with. Honey and pollen are stored just above the brood nest. Then, when that part of the hive has been filled with honey, the bees continue upwards for storage, that is, into the supers, whether there is an excluder there or not. Thus the delay in storing honey above the excluder is due to the manner in which they relate honey storage to the brood nest.

Whether or not to use an excluder therefore depends on whether, when the supers go on, there is a significant amount of honey in the hive below. If there is, then this will act as an excluder, for the bees will keep their brood nest underneath that layer of stored honey. My bees always come through the winter with a good layer of honey in the top of the hive so I never use excluders except, rarely, with special systems, such as shook swarming. I never get brood in my comb honey supers and rarely do I get pollen there. And all this, of course, is one more reason for letting the bees keep all of the late honey, which is almost a must for a comb honey beekeeper like myself anyway.

Are there significant differences among the various excluders? I think the old style of excluder which has strips of wood alternating with strips of excluder wire is as good as any. There is no significant advantage, in my opinion, in an all-wire excluder. The zinc and plastic excluders I am not so sure of, but I cannot speak with *Continued on Next Page*

Taylor... Cont. from Page 289

confidence on these for I have not had enough experience with them. My doubts concern the sharp edges.

Certainly there are, in some with circumstances some and systems, advantages to using excluders even when they are not absolutely necessary. To keep one's extracting supers of virgin comb, that is, free from brood, year after year is more than worthwhile in terms of honey quality. Quite apart from whether darker combs tend to darken the honey, it is, I think, not acceptable to have brood getting mingled with honey, no matter how well you then strain the honey.

Whether or not to use excluders depends upon your thus management system and the nature of your honey flows. I do not use them in my system, but this is certainly not because they are, as is so often alleged, "honey excluders". To speak of them that way is to betray a basic misunderstanding of how they work.§

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Maintaining Docile Honey Bees Under African Gene Flow — Part II

By DR. JOSE-ANTONIO SARAIVA • RR 1, Box 1512-B • Grayling, MI 49738

Summary, Part I

The author began a project in Brazil designed to reverse the "Africanized Gene Flow" dominant in the area. The first step included requeening all hives in his experimental apiary with European queens, and as many of the local hives as possible.

The presence of abundant sites for feral colonies, plus the low level of cooperation from local beekeepers made this project difficult, but not impossible.

Requeening and maintenance of "Africanized Gene Free" colonies did pay off, as protective clothing was not required after two seasons.

Part 2 outlines the strategy used to accomplish this remarkable project.

The Program's Strategies

The fundamental point in reversing the "Africanized" gene flow relies on the simple fact that, independent from whichever drone they have mated with, "Africanized" gene-free queens produce drones which are also "Africanized" genefree. As a consequence, if one persistently maintains these types of queens, the probability that any virgin queen, "Africanized" included, will mate with "Africanized" genefree drones will increase with time. This probability will also increase as the sources of "Africanized" gene-free drones also increases. Therefore, persistence in maintaining "Africanized" gene-free queens is THE KEY to success, while outnumbering "Africanized" drones is a means to speed up the process.

The crucial point remains finding a way to identify individuals, primarily queens and drones, that belong to the desirable strain, from those suspected of belonging to the undesired "Africanized" strain.

I have to agree with Taber (1986) that no method for this exists that is very accurate. However, using any method, despite some inaccuracy, is better than none at all. The easiest method, preferred because it can be used by anyone, is based upon the selection of docile strains whose queens and drones are of *consistently uniform color*.

Color is used for all other domestic animals to define, along with other phenotypic (physical) characteristics, a certain strain or race. Why it is not a part of all honey bee breeding programs is something I have always had difficulty understanding. Beekeepers seldom show the enthusiasm that other animal keepers have for the particular characteristics of the race or strain they breed. As an agronomist, I am used to seeing farmers proudly show the virtues of the crop variety they are growing.

The selected strain must have, and will be monitored for, many other desirable characteristics, such as low swarming tendency, low running behavior, high honey or pollen productivity, high disease resistance, etc., all according to a beekeeper's preference. Similar to all stock improvement breeding programs, when any particular undesirable characteristic would show up, that particular colony would be eliminated from the program. This is accomplished by the immediate substitution of the queen and the continuous capture of the colony's drones during



Partial view of the experimental apiary site showing "Baby" hives, equivalent to 1/4 of a shallow super hive box and capable of vertical growth, like a normal hive. In these nuclei, the breeder queens were kept to increae their egg-laying life. A meteorological instrument shelter is also shown to the left.

a "quarantine" period.

With this in mind, mated queens from good strains of American commercial stocks were imported to begin a pre-selection process for color uniformity, and the way they performed in the area of Rio de Janeiro.

Unfortunately, the Buckfasts were the first to be eliminated — due to their lack of color uniformity. Outside of this, they did very well, and I could forsee their usefulness, even for Brazilian let-alone beekeepers. However, in future, the color uniformity problem of Buckfasts can be worked out without losing their good characteristics.

The Midnite black bees were the next to be eliminated. The black drones are quite similar to the "Africanized" drones. This would create a problem whenever one needed to select between "Africanized" drones and Midnite drones.

Also, their uniformly black queens, although quite distinctive from the "Africanized" ones, are difficult to find in a hive of equally black bees. The size difference ends up as the only key to spot the queen among the bees, which generally does not help to speed up the process of checking on her, making sure the hive still has the same queen heading the colony.

I never saw an "Africanized" queen in Brazil which had an all black or an almost all yellow abdomen. Those I saw had both colors on the abdomen, with the black area slightly predominant over the yellow, in most cases. They look like most queens of the popular all-American mongrel, which many beekeepers call common "Italians".

The use of uniformly yellow bee strains seemed to meet the program's needs. Most of these drones have highly distinctive yellow bands and could be separated easily from "Africanized" drones.

The queens too, with an almost all yellow abdomen, and at most two black bands, are highly distinctive from the "Africanized" queens, and are easy to find in a populous colony because of both color and size differences. Such is the case of the Starlines, the Ultra-Yellows, the 3-Banded Italians and the Golden-Yellows, among other commercial strains readily available in the American market. Commercial queens of the above mentioned strains were once used in the Rio de Janeiro program.

Artificial insemination was never used to maintain the docile stocks. Also, no attempt was made to maintain the strains separate from each *Continued on next page*



Brazil...Cont. from Page 291

other. Therefore, a very yellow mongrel was the end result of the program. Virgin queens were selected based on size, vigor and yellow abdomen color, with tolerance of black in the two terminal abdominal bands. After this first screening and natural mating, a good egg-laying pattern was the second criteria we looked for. Later, a queen's offspring characteristics were used to decide if we would keep a queen in the program, either as a colony queen only, therefore a yellow drone mother, or as a breeding queen.

From the above, you can see that the uniform yellow color of an individual "Africanized" gene-free queen, the color of the drones she produces, and the performance of her offspring were *more* important to this program than the specific strain she came from. I do recommend, however, the use of queens from strains developed by inbreeding, because of their greater uniformity.

On the other hand, if you cannot afford to buy breeder queens, I do not recommend buying commercial yellow strain queens for this purpose from breeders who also raise black bee stocks. The resultant hybrids, though docile, may be difficult to separate from the "Africanized" hybrids.

In conclusion, I would like to say that what was done in Rio de Janeiro can be done in the United States by any beekeeper, acting independently or through team work. A much higher probability of success exists in the U. S. because the conditions are very favorable, especially since truely "Africanized" bees are not yet residing in the U.S.A. The sooner each of you starts acting to control "Africanized" gene flow into your apiaries the better it will be for the entire American bee industry.

Acknowledgments

The author wishes to thank all the many volunteer undergraduate students of the Federal Rural University of Rio de Janeiro for their long hours devoted to this program. The author also wishes to thank Dr. Eric H. Erickson, Jr., for his encouragement to write this manuscript and for reviewing it.§

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n a few short weeks, harvest season of berries will begin, starting with strawberries, then blueberries, raspberries, blackberries, cherries — sour and sweet — and (for those fortunate ones) the currants and gooseberries. Everyone gobbles up handfuls of the first berries to arrive, then thoughts of freezing and jelly-making occur. Be sure to freeze some berries for recipes to come - freeze the berries "dry" to use in beverages, muffins and pies. I always inaugurate the first snow of the year with a bowl of cereal, sprinkled with raspberries, drizzled over with honey, then a bit of milk. The hot, humid days of July are forgotten, as well as the prickly vines and thorns which protest my thievery.

Now let's try to use some of those extra berries for jams, jellies and other preserves. The chemistry of jelly making is absolutely fascinating to a chemist and absolutely frustrating to a cook. Particularly to a cook who insists on using honey for preserving.

Although various cookbooks will try to convince you that there is only one secret to successful preserves, please don't believe them for a minute. Perfect preserves depend on several factors, all of which are completely secret to the cook. Therefore, preserving fruits with honey is a gamble, but one worth taking. You can end up with a smashing success. Or you can end up as an acquaintance did, with this question: "Ann, what can I do with 16 jars of strawberry syrup that was supposed to be strawberry jam?" The answer to that was easy: "Find 16 friends at Christmas time, tie a green ribbon around the jar and present them with a jar of syrup and the following recipe:

WHOLE WHEAT PANCAKES OR WAFFLES

1 egg 1 cup buttermilk 2 tablespoons cooking oil 3/4 cup whole wheat flour 1 tablespoon honey 1 teaspoon baking powder 1/2 teaspoon baking soda Optional: 1/4 cup coarsely chopped pecans

Beat egg slightly, then add rest of ingredients. Beat only until just blended, leaving batter a bit lumpy. Cook as you would normally fix waffles or pancakes. Makes 12 3-inch pancakes or 3 waffles.

contributed by Janice Miner to KITCHEN CREATIONS WITH HONEY by Ann Harman and Ernest Miner, Jr.

Successful preserves depend on: the type of fruit and the natural pectin it contains; the amount of pectin that particular fruit contains when you pick it, and also how long you keep that fruit before preserving; the acidity of that fruit; the acidity of the honey; and, finally, the amount of honey used, and the cooking time. Don't be discouraged! The taste is more important than the consistency!

STRAWBERRY PRESERVES

1 quart stemmed strawberries 3 cups mild honey OR orange blossom honey 1/2 cup lemon juice

Combine berries and honey. Let stand 3-4 hours. Bring slowly to a boil, stirring occasionally. Cook rapidly until thick, about 20 minutes. Add lemon juice and cook 10 minutes longer. Spoon into hot sterilized jars. Seal and process in a boiling water bath for 15 minutes.

PUTTING IT UP WITH HONEY by Susan Geiskopf



The "freezer jams" can be a welcome relief during busy summer days when the green beans are threatening to go dry and tough if you don't pick them immediately. The flavor of the freezer jams is sometimes superior to the jams made the traditional way.

FROZEN BLUEBERRY JAM

3 cups crushed blueberries

- 1/4 cup lemon juice
- 5 cups honey
- 1 package powdered pectin
- 1 cup water

Crush blueberries, using a fruit press or blender. Then measure 3 cups of crushed berries into a large bowl. Stir in lemon juice and honey. Mix well. Let stand 20 minutes, but stir occasionally. Boil pectin and water together about 1 minute, then stir into the fruit mixture. Stir about 2 minutes more, then ladle into freezer containers or jelly jars. Let stand at room temperature 24 hours. Then cover with lids. Store either in freezer or refrigerator. The jam will keep at least 6 months.

THE BLUEBERRY CONNECTION by Beatrice Ross Busek

Although the Damson plum is traditionally turned into jam or jelly, the next recipe will be a welcome addition to a winter meal of pork or poultry.

BLACK CHUTNEY

1 pound Damson plums water

- 2 cups honey (can be flavorful)
- 1/2 cup cider vinegar
- 1/2 pound (1-1/4 cups) raisins
- 10 prunes, cooked, drained, pitted, chopped
- 1 apple, peeled, cored, chopped*
- 1/2 teaspoon EACH:
- allspice, pepper, cloves, ginger, cardamon
- dash of cayenne pepper

Cook plums with just enough water to keep fruit from burning, until soft enough to remove pits. Remove pits, return plums to the kettle and add the remaining ingredients. Stirring often, cook gently until thickened, about 30 minutes. Pack into hot sterilized jars, seal, and process in a boiling water bath for 20 minutes.

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MISGIVINGS About Colony Management

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

A choal Gotohor

o ne should never go grocery shopping when hungry. It follows that the most marginal things in the cabinets were purchased when one was convinced that shoe polish could be made palatable. I suspect that one should not write when one is frustrated. Otherwise, what follows will happen.

With excuses never being in short supply, I didn't remove most of my crop last year. No matter — it's just a hobby and I was only in it for the enjoyment. My wife's version was a bit different.

My excuses for last year were: (1) it's a small crop and (2) I'm really busy just now. It all sounded like ample justification to me. In a way, I actually felt good about leaving (for once) an abundance of food for the bees to use as winter stores. Additionally, the winter was exceptionally mild. A few weeks ago, I was angered to confirm what I had known was happening all along - the winter kill was about the same. Dysentery seemed especially bad and some bees died on (what seemed to me anyway) ample stores. No, I didn't feed Fumadil-B.

My spirits rebounded when, during late February, we had a remarkably mild weekend. With all that needed doing around my home, I nevertheless designated that time for the bees. I cleaned bottom boards, repositioned stores and checked the growing brood patterns. I added pollen patties and lightly dusted with Terramycin to help with the chronic European Foulbrood that my hives frequently get. I installed feeders filled with a thick syrup solution, or alternatively, I used a comb filler to place near nests and replaced distorted combs. I reversed brood bodies and removed entrance reducers. Miraculously, I added supers to some yards in the firm belief that early storage space would encourage the bees to work diligently. In general, I felt real good about things.

"The best laid plans . . . "

Chapter Two

After becoming involved in several spring workshops, meetings and other late winter/early spring efforts, I came back to the bees for another round of feedings and manipulations.

A very prominent professional beekeeper recently said, "We know practically nothing about bees when we compare ourselves to other agricultural efforts". I really didn't want to believe that, but I'm a bit shaken just now. I was left with the impression that most of the colonies had prospered in spite of my help. In many instances, the syrup was untouched and had begun to ferment. The feeders were reasonably near the cluster and the weather had been warm enough for some feeding to occur. The hives that I had used the comb filler on had thick mold growing on the sugar stores that I gave them. Two hives had been robbed out; I suspect due to the effects of the comb filler. In some cases, the Terramycin had not been removed. I followed recommended application rates. In several cases, the pollen substitute had not been taken and had run from the top bars into a gooey mess along combs and piled itself into a blob on the bottom board. Reversing the brood bodies enticed a few colonies to abandon developing

brood nests and assume positions near the added food supplements. The final insult: the wind (or something) had knocked two colonies from their stand. Good Grief! This was supposed to be the year that I was totally prepared.

Now — How to salvage this litany of sorrows? How to turn disgust, and embarrassment into something positive? The majority of the hives had responded well and are on the way to becoming "boomers", but for the others; did my management procedures actually set them back? Yes, they did. The situation began developing last year during late summer and then into winter. Then, in the spring, when weak colonies were pressed to perform beyond their capabilities, a mess resulted.

Now early on, I justified this debacle by saying that I was busy, but no doubt, most people are busy. I rather suspect that many beekeepers keep bees as they have the time and the inclination. I realize that some are offended at that comment, but for the great number of beekeepers, it's a hobby. It's supposed to be fun, and when it's not, they'll move on to something else.

In all honesty, I want to make the following suggestions, not only because of the rough start of this spring, but because of many



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conversations, a lot of reading and information gained from other beekeeping projects. Let me know if you can add to it.

SOME FACTORS AFFECTING MINIMAL INPUT BEEKEEPING

• Keep productive queens heading the hives. It's hard to justify the expense at times, but late winter/early spring is the worst time to have a queen producing spotty patterns. The hive can't build up in time to be productive.

• Feed Fumadil-B in the fall. Frequently, some hives don't take the syrup well or other problems will occur, but dysentery really takes a heavy toll on wintering colony.
Put on entrance reducers in the fall, and allow for a small upper entrance.

• Provide for food stores in the *fall*, not in late winter/early spring. Any feeding technique that doesn't allow the bees an opportunity to process the stores to their specifications is risky, at best.

• If there is a disease problem, treat with Terramycin and treat correctly. Over-dosing brood on antibiotics can kill it. Ask for competent assistance if necessary.

• Feed only what the hive can consume in a few days of warm weather. A one pound cluster will have a hard time managing a one pound pollen pattie or a gallon of syrup.

• Super early to help hold off swarming. Unless one wants swarming it will consume vast amounts of time.

• Finally, stop interfering with the colony until the honey crop is processed.

It's human nature to want to help, but I wonder if we don't "help" too much at times. It's even possible to help at the wrong time. Augmenting the bees' behavior/biology as opposed to dominating it will (I think) be more productive (and probably more fun) in the long run.§

()

Home...Cont. from Page 193

It sounds interesting,

but certainly doesn't

very simple things with your excess of berry harvest. First, simmer the fruit gently, with perhaps a little water to keep from burning, then crush and strain to obtain just the unsweetened juice. This is particularly successful with raspberries since many people object to the seeds. Keep the unsweetened juice in your freezer. I'll be giving you some recipes for the juices in subsequent months. Second, you can make Crocked or Brandied Fruit, sometimes called Tutti-Frutti.

BRANDIED FRUIT

Place in a crock with a closely fitting lid: 1 quart brandy Add, as they come into season, about:

- 1 quart strawberries
- 1 quart cherries
- 1 quart raspberries
- 1 quart currants
- 1 quart gooseberries
- 1 quart peeled sliced apricots
- 1 quart peeled sliced peaches
- 1 quart peeled sliced pineapple
- 1 quart any fruit EXCEPT apples, bananas and grapes

Add 2 cups honey to the brandy and mix well before adding the first fruit. Then add 2 to 4 cups honey with each addition of fruit. Mix the fruit with the honey before adding to the crock. Mix the contents of the crock with each addition. Keep the crock in a cool place. The mixture will keep indefinitely.§





UPDATED EDITIONS

Probably the biggest news in the bee book department is not a new book, but a second edition of a very popular beginners reference book: The Beekeeper's Handbook⁸, by Diana Sammataro and Alphonse When the first edition Avitabile. appeared in 1978, it was published by an unknown publisher, and the book became known by word-of-mouth. By the time the second edition was well into revision, and the new publisher was being determined, the handbook was being used by many beginner courses around the country. I frequently find that beekeepers have this book, and this book only. They sometimes can't pronounce or even remember the names of the authors, but they know which one it is - the book with the bright orange cover.

There is no other book - orange cover or not - which equals The Beekeeper's Handbook. It is designed for quick reference and for serious study. It does many things right. It follows a logical flow in its organization and layout. It is extremely well illustrated, and the second edition has even clearer illustrations than did the first. It possess a very complete Appendix in introductory beekeeping literature with drawings, data, and a great deal of useful information. The reference section is fresh and well researched (Diana spent time in my own library reviewing books to make sure that everything which should be included was there). One added feature is the use of government reprints, which, if you can find them, offer information not found in other places.

The format used in the writing is unique. There is always a clear introduction to each section, followed by either a calendar, or well illustrated 'how-to' section. Interspersed are short 'advantages' and 'disadvantages' sections which provide meaningful guidance to the student or beekeeper. This single feature is enough for most beekeepers to own this book. But here is a section by section summary of the book:

• What you should know first deals with legal requirements and bee

sting reactions.

• Understanding bees discusses the evolution of bees, bee races, the castes, and basic biology. Throughout the section there is a constant emphasis on the involvement with beekeeping.

• Equipment and beekeeping supplies discusses basic hive parts, complete with a price summary for purchase.

• Before the bees arrive deals with the apiary site, hive stands, recordkeeping, and much more.

• Obtaining bees reviews the major sources of bees, and the pros and cons of each.

• Working with bees covers the when and how of a colony visit, and covers basic items like lighting the smoker. It even prepares you for the unexpected.

• Starting Bees from packages takes the beekeeper through the steps of starting bees this way. It is very complete and very well illustrated.

• Feeding bees discusses the particulars of sugar feeding, and the various methods of feeding. Pollen feeding is also discussed in detail.

• General seasonal management starts with later winter and takes the reader through the entire honey producing season and ending with fall preparation.

• Special management problems deals with matters like uniting colonies, moving colonies, robbing, marking the queen, swarming, swarm control, making increase, supercedure, requeening, queen introduction, queen rearing, and the two queen system. It is an extensive section, with many drawings.



(617) 252-3357 O. K. Bee Supply, Wichita, KS (316) 684-6630 • Products of the hive carefully and adequately covers honey, beeswax, bee brood, venom, royal jelly, propolis and pollen.

• Bee pests and diseases includes a wide range of pests, poisonous plants and diseases. Both the Varroa and tracheal mite have been added since the first edition. A section on pesticides, prepared by *Gleanings in Bee Culture* Editor Kim Flottum, condensed a complicated subject into a few concise pages.

• In bee plants, one can find a long list of plants requiring or benefiting from bees for pollination, the mechanism of fertilization. Surprisingly, it does not outline major nectar and pollen sources for bees.

There are a few weaknesses. I suspect that the publisher failed to have the manuscript reviewed by an independent expert, for a few out-ofdate recommendations remain from the first edition. But these errors are very minor. I would have liked to have retained the first edition's graphic presentation. This is an odd shaped book, and the old graphics made it unique. Now it is an oddsized book with six columns across. It is much less interesting this way, and physically requires too much room on the desk or on the shelf!

Overall, this book gets a solid A. I recommend it widely for students. I use it for introductory beekeeping and even college courses. It is a good book to teach from, for it remains neutral on many subjects which other authors express strong opinions. The second edition of The Beekeeper's Handbook, is required reading for every new beekeeper, and most The only hobby beekeepers. exceptions are those who already own the first edition. And they would be well advised to invest in the second edition too.

THE COMPLETE GUIDE TO BEEKEEPING⁹ by Roger A. Morse, was first published in 1972. This third edition has been updated, and a very lucid chapter on making honey wine has been added. This is a 'meat and potatoes' beginners book, and may be used for introductory courses. Its price makes it an attractive option for the many adult beekeeping courses offered in community colleges and by bee associations around the country.

Chapter summaries indicate the coverage: Bees and beekeeping reviews the value of bees in human society, how to start beekeeping, select a site, and protect yourself. How to start in beekeeping shows the essence of packages bees and swarm catching, along with bait hives *Continued on next page*

Connor...Cont. from Page 297

(which Morse has popularized). Spring management and summer management show the steps in colony manipulations, leading to Removing the crop, which includes extracting, bottling and selling the product. In the fall crop and fall management we read about requeening. Chapters on wintering bees, predators and diseases and the queen are self explanatory. Special practices include queen rearing, comb-honey production, chunk and cut comb-honey production and other subjects. A list of major and minor honey plants is useful, although not comprehensive by any means. Chapters on pollination, biology and honey wine complete the book. There is a very brief section on further reading and an index.

Forced to chose, I would elect The Beekeepers Handbook over The Complete Guide to Beekeeping. However, the Guide is a solid book, factually correct and well illustrated with black and white photos. If I kept bees in the Northeast, I would try to obtain both for my library. If I owned an earlier edition, however, I would not buy the third edition. You can get better mead information elsewhere, especially in Morse's own book on the subject.

Also in its second edition is Karl

Showler's **The Observation Hive**¹⁰. This book has been very popular since it's release, and the second edition includes rules for judging observation hives in competition. The book deals with the history and design of observation hives, and some of their potential uses. It is somewhat short on the 'how' aspect, especially lacking directions for building and starting an observation hive. I find that US beekeepers want to have one set of plans to use, and then they will build what they want anyway. Showler encourages the reader to design their own plans, and to build it and stock it properly.

There are a number of nice black and white photographs showing different designs of observation hives, so this is certainly a valid way to learn how to present these miniature hives to the public or to students.

Another valuable book has just been reprinted as a second edition. First published in 1979 *Bees Don't Get Arthritis*¹¹ by Fred Malone, this is one person's story of his experiences with bee venom therapy from Charles Mraz and other practitioners. The book cites many experts and quotes their opinions about the use of bee venom and other bee products.

The book takes a wide swipe at

the US government's inactivity in the area of arthritis research using bee venom therapy, with plenty of examples of what the Canadians and Europeans are up to. Some beekeepers may be taken back by the works Malone writes, especially if they disagree with the idea of apitherapy. But many more will find the work inspiring and will hope for the day when US medicine can look at hive-product therapy as a valid research subject.

Since beekeepers frequently find themselves answering questions about bee venom therapy, I recommend that you obtain this book, or make sure it is in the local library as a reference.

VIDEO RELEASE

Not all the new publications in 1986 were books. There were three video tapes worth mentioning.

Edward Weiss has produced An Introduction to Beekeeping¹², a lovely video tape for nonbeekeepers or those who wish to become one. It has a limited hold on the viewer, that is, it may be viewed once and much of the content obtained quickly. But for that reason, it has a wide potential audience. The technical production qualities are excellent, and the editing Continued on Next Page

SWARMING Examples for 5. C. Mart The Beekeeper's WINTERING Handbook PESTICIDES FEEDING DIVIDING MITES SEASONAL MGMT. 10 Years in the Making! BEE PLANTS The Second Edition is finally finished. Updated, added-to and improved. It's all here. DISEASES GET YOURS EARLY. HIVE PRODUCTS CAT. NO X76 EUN FACTS THE A. I. ROOT CO., P.O. Box 706, Medina, OH 44258-0706

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Connor...Cont. from Page 298 is smooth and non-intrusive.

The program takes the viewer through the season with a new package of bees. The process is step by step, and the viewer should feel comfortable with the instruction. The program is very up-beat, and very supportive. Do's and Don'ts are frequently mentioned.

The program is ideal for showing to non-beekeepers and as an introductory video for a bee school. It is a wise investment for the new beekeeper who wants and needs to hold hands with a qualified instructor.

Another introductory tape was released about mid-1986 too. Entitled **The Basics Of Beekeeping** 2^{12} , it was produced by Moore Productions on the West Coast. The quality of this tape is first rate, and covers most aspects of beginning beekeeping in enough detail to help even the most helpless beginner.

It has a somewhat western flavor, with the emphasis on west coast equipment (though not greatly different than east coast) and seasons.

Yet another video tape was ilmed in 1985 and released in early 1986. The fourth in the Weekend Beekeeper Series released in 1985, *Honey Management*¹³ contains two programs. The first features Dr. Richard Taylor in a program about Shook-Swarm Comb Honey Production. The program shows the process of removing bees from a colony to produce stain-free comb honey. Dr. Taylor discusses several of the processes used in the technique. Later in the season, the honey is harvested and the bees put back for winter.

There are some problems with uneven sound with this tape, and there are a few awkward movements. But all in all, beekeepers who have viewed this program have been pleased, and have understood the shook-swarm concept for the first time.

The second part of the tape is a visit to a sideline beekeeper's honey house in Pennsylvania. Mr. Jerry Ely discusses his three level honey house where he processes many tons of honey each season. We start in the field and remove the honey, and then follow it through to bottling.

I think this is the best video made so far in this series, and it contains many ideas. It is not for beginners, but for the existing beekeeper. I think both sideline and commercial beekeepers have benefited from this particular tape, as well as many hobbyists. These programs are perhaps best viewed by bee clubs at regular meetings, or part of a lending video library. With VHS video equipment found just about everywhere, I think we will see more video tapes developed in the future.

One noteworthy item was printed this season. This is a set of postcards developed from black and white photographs which appeared in the pages of *Gleanings in Bee Culture*. Called *Vintage Beekeeping Postcards*¹⁴, they show the following views: bee boat, bee box, bee car, bee tree, Dutch beekeeper, hands of bees, little girls, tall hives, Rev. Landstroth, and woman beekeeper. The stock is heavy, with a linen-like finish. They will find many uses in the hands of beekeepers.

Another set of post cards also became available this past year. This is a set of 6 beautiful full color cards²², printed in Japan, depicting various bees on flower photos. Glossy finish and imprinted on the back with room for message, address and a description of the reverse photo.

ON THEIR WAY

There are several titles which have been announced for 1986 release, but I have not received a copy.

In England and other parts of Europe, oilseed rape has changed the Continued on page 303

VACUUMING BEES OUT OF A HOUSE

By JOHN W. ROPES • 21 Pattee Road • E. Falmouth, MA 02536

Most beekeepers have been asked to remove bees that have established a colony between inner and outer walls, attics or other spaces in homes. Many decline to tackle such jobs. The colony may be high off the ground, making access difficult and dangerous, and opening it up is a time consuming operation requiring some skill and equipment. Honey oozing from cut comb and bees frantically flying about complicate removal, and then there is no assurance that the queen will survive the operation.

Two winters ago I was asked to remove bees from an old house that was being renovated. Painters had torn out plaster from a room exposing a sizeable colony in the ceiling. It was very cold and the bees stayed huddled together on the comb, so no one got stung. My only recourse upon arrival was to remove honeybearing comb and then the bees and comb. Although about 45 pounds of honey was recovered, all of the bees died in the process. I considered the job very unsuccessful.

Nevertheless an idea persisted afterwards that was eventually developed into a method other beekeepers may find useful. I knew that bees can be effectively blown from supers with air, so thought why wouldn't it be possible to vacuum them from their comb into a super containing frames of drawn comb.

This year I had an opportunity to apply my idea. A neighbor had bees in his house. Although I tried to persuade him that a funnel-cone over the bee's entrance to the house and a hive set up nearby with a caged queen to lure the bees into the hive was a good method, he wanted them out as soon as possible.

Weather prevented any immediate action. Eventually many bees clustered outside the house entrance, suggesting that they were preparing to swarm. So, a hive with drawn comb was set up nearby, and sure enough within a few days the bees swarmed into it. The period of bad weather also gave me an opportunity to assemble the equipment for vacuuming the bees, as follows.

A box was constructed of 1/2"plywood 16-1/4 x 20 x 8" with sides and a bottom, but no top (see figure). Rails were installed inside the box, slanting diagonally along the two longest sides. These were to hold a 14 x 20" air filter, such as is used in furnaces. It was securely stapled to the rails with the fabric side uppermost. It also divided the box into two areas: in area A bees would be drawn in by air flowing through a 1-1/2" flexible, clear plastic hose inserted in a hole at the end of the box facing the fabric side of the air filter; in area B, only air would flow through and out a 1-1/4" hole for the household vacuum cleaner nozzle at the other end of the box. A full depth super with frames of drawn comb was sealed to the top of the vacuum box with caulking, and cleated together. Then a plywood lid with a plexiglass window 8 x 14" was sealed and nailed to the top of the super.

At the house, outside shingles and boards were removed exposing the bees and comb. The comb was attached to the back of the inner wall like leaves in a book. During operations with the vacuum device, bees were sucked up through the hose and onto the filter. In response to light entering the plexiglass window, the bees moved up onto the frames of comb. After removing bees from one side of a comb it was easily folded back for bee removal on the backside. Successive layers were vacuumed and when most of the bees had been removed, pieces of comb containing eggs, larvae and pupae were cut out to fit into empty full depth frames. Removal of all comb from the house exposed a few remaining bees that were also vacuumed up. When no bees were at.large, the hoses on the vacuum box were removed and the Continued on Page 311



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May 1987

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Have to Move?

By KATHY & ROGER HULTGREN • 155 Lovell Road • Holden, MA 01520

Every beekeeper at one time or another will be faced with moving their hives. It might be because you're at your wits end because a nuisance pest has been taking advantage of your hive, or your apiary site is too close to a pending pesticide spray. Whatever the reason let's examine the necessary steps that a move entails.

After deciding to move your hives, you will need to locate a new site. Perhaps you're lucky and a friend will volunteer his property. Another avenue to explore is to contact fellow beekeepers, or your local association for suggestions. They might know someone who would share their apiary site, know of a vacant location or have had someone contact them for free pollination service. State and Federal properties are another suggestion, but they require permission from the appropriate department before a hive can be located there. Should these fail, you might scout around and try to rent a location. A rental fee is usually paid in honey at the time of harvest. Owners of vacant wasteland, or farmers whose fields are not presently used for crops, are prime people to approach. Lets assume you've located an area in which you can move your hives.

The next decision is how do you establish the apiary. In selecting your site there are a few things to keep in mind. It's best to have a spot which is somewhat secluded from traffic noise, and disturbances from animals and children. Ideally, your apiary would be in full sun most of the day but receive some shade in the afternoon. There would be good air circulation and water drainage, some sort of wind break from winter winds, such as a stone wall or trees, pollen and nectar bearing plants in the vicinity, as well as a source of fresh water within an eighth of a mile. Given these conditions, you should plan on locating the hive entrance towards the south-southeast direction in order that the morning sun will peer into the front entrance and encourage early foraging.

With the site selected, it's time to turn your attention to the hive itself. It's best to start your preparation for

a move at least one day in advance for there is plenty to accomplish. Plug all the cracks and knotholes you can locate on the hive bodies. You can be sure if you miss one, the bees will find it. Excess honey should be removed from the hive so that the weight you moving is minimal. This eliminates the precaution also problem of frantic robbing which occurs if a super is dropped. The frames also need to be secured for the move. Check to see if the propolis and excess burr comb that is present is sufficient to prevent the frames from moving about. If not, there are a number of ways to secure them. One suggestion is to nail the three center frames to the hand holes at the front and back of the hive body. This will prevent the frames from possibly crushing the queen. Another means is to insert and nail a notched stick down between the frames as far as the rabbet. A similar stick is installed at the bottom of the frames, inverted prior to installation.

The weather will determine the amount of ventilation needed for the move. If it's still cool, install a piece of wood 1/2 inch wide x 1/8 inch thick at the four corners between the hive and cover. When stapled, a 1/8 inch gap will be created and should be sufficient. However, in extremely hot weather more ventilation will be needed. An empty shallow super covered on one side with window screen or 8 mesh hardware cloth is perfect and there are commercially available moving screens that are made for this express purpose. If frequent moves are in your future, fasten the bottom board permanently to the hive body. Otherwise, steel strapping 3/8 x .015 inch will secure the various pieces together. Should you not want to invest money in a one time move, use a long rope and tie it loosely around the hive as if it were a present. Place a stick in the rope's knot and twist it to tighten the rope. Another means is to tie ropes at each end of the hive body in order to hold the hive together. The method we have used in the past is to staple the hive, and then to insure that everything stays together during the move we use web clamps. These are nylon straps with a tightening mechanism. When stapling, try to situate the staple so that one leg is in the bottom board and the other is in the hive body. Staple both sides and rear in this fashion. The cover is also converd in the some more over you staple all four sides. After the hives are situated at their new site the staples and web clamps are removed. Use your hive tool to pry out each leg of the staple somewhat before applying the final yank which will dislodge it.

The most ideal weather for a move is a cool rainy day, while the best time is at dusk when all the bees have returned from their gathering expeditions. Unfortunately, one might not have these circumstances. Should you be forced to close the hive in mid-day, smoke it at regular intervals for about 1-1/2 hours. This will confine the bees that are presently there and will inhibit the returning field bees from exiting again. Another method for collecting the returning field bees is to leave a comb of brood on the hive stand. The frame is later returned to the original colony. Should this be inconvenient, place another colony on the hive stand. The returning field bees will be accepted into this new colony as they are generally returning with a full load of either water, pollen, propolis or nectar.

Just prior to loading the hives for the move, insert a "v" shaped wire mesh screen, 4 inches wide and as long as the entrance into the hive entrance. This plugs your last big hole. Make sure the vehicle you are loading is running, for the engine vibrations have a calming effect on

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GLEANINGS IN BEE CULTURE

Connor...Cont. frmo Page 299

nature of beekeeping. Now a book by Allan Calder, *Oilseed Rape and Bees* ¹⁵. In a review written by Dr. John B. Free we learn that:

"This is a timely, informative and most welcome book. The phenomenal increase in the amount of oil seed rape grown during the past two decades has transformed beekeeping and the profits that can be derived from it in many parts of the United Kingdom. Oil seed rape is of particular value to beekeepers as it serves as a break crop in grain growing areas in north, south and eastern Britain where intensive agriculture is often practised and the world flora has been sadly diminished.

Beowulf Cooper worked as a British Agricultural Advisory Service, and was devoted to bees. Using notes intended for a book by Cooper, Philip Denwood has edited the material and produced *The Honey Bees of the British Isles*¹⁷. In a review written by Victor Dodd, we learn:

"Significantly, the book is written for beekeepers, although it is by no means all easy going, and one of the chapters, such as the second on Ecological Genetics, will probably slow up all but the most scientifically inclined reader.

I am especially pleased to learn that Brother Adam's **Bee-keeping at Buckfast Abbey**¹⁸, will be re-issued by Jerry Burbage at Northern Bee Books. Burbage has become a very good book publisher for beekeeping subjects in the UK, and this book is in

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very high demand.

Brother Adam needs little introduction to many experienced US beekeepers, and there have been numerous articles about him over the past few years.

The monks at Buckfast Abbey are famous for obtaining maximum yields of honey with a minimum of time and effort. Their secrets of apiculture are explained by Brother Adam. This book is presently in print in four languages and now, with this new English edition, beekeepers will be able to benefit from the latest thoughts on honey production and queen quality from the Master Beekeeper.

Perhaps even more exciting is the announcement that Brother Adam has prepared an English translation of his book on bee breeding. Titled Breeding the Honey-bee — A Manual of Apigenetics¹⁹, this book:

"follows in the wake of the successful In Search of the Best Strains of Bees and is a painstaking unravelling of a unique genetic enigma. A lifetime spent perfecting the Buckfast strain enables Brother Adam to speak authoritatively on every aspect of bee breeding from parthenogenesis to instrumental insemination. Being the distillate of 60 years of study, experimentation and observation, it offers a rare opportunity for the average beekeeper to extend his knowledge of the subject."

Certainly this book will be well worth the investment, and will reward those who read it. I suspect some criticism of Brother Adam, the Master Beekeeper, from a few scientists. If you want only pure science, stick to Rinderer's book mentioned last month.

And one book due to appear in March of 1987 is a reprint of *The Sacred Bee*²⁰ by Hilda M. Ransome. According to the publishers promotional notes:

"The author is not concerned with Beekeeping, but with the sacredness of the Bee, with her purity, with the Honey which figures so largely in early religious rites and which was known to the Greeks as the 'Food of the Gods'. We are told of the myths and superstitions connected with the bee, which are found among the folklore of many peoples, of the story that she was 'Ox-born', was a symbol of the soul of man, and that she was the only creature who came to earth unchanged from Paradise."

The publisher writes that there is a chapter on bees in America.

Well, this has summarized a year of bee-press for 1986. There are a few books I overlooked, including cookbooks dealing with honey. These, however, represent the cream of an excellent crop of bee publications.§

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¹⁰1986, Bee Books New and Old, Somerset, UK, hardcover, ISBN 0-905652-03-7.

¹¹Academy Press, Rutland, VT, ISBN 0-914960-60-1, softcover, 180 pp,

¹²1985. Creative Programming Inc., VHS or BETA video tape, 58 minutes running time.

¹³1986, Beekeeping Education Service, 57 minutes running time. VHS or BETA.

¹⁴1986, Prairie Song Apiary, Coon Rapids, Iowa, a set of 10 cards, 3.5 x 5.5 inches.

¹⁴1986, Northern Bee Books, 8 color plates, 9 line drawings, bibliography, paperback, color cover, 53 pp.

¹⁷1986, Northern Bee Books, West Yorkshire, UK.

¹⁸Announced for November 1987, Northern Bee Books, West Yorkshire, UK, 100 pp, numerous black and white photos, ISBN 0-907908-37-3.

¹⁹Expected October 1986, Northern Bee Books, West Yorkshire, UK, 100 pp, ISBN 0-907908-32-2.

²⁰Expected March 1987, Bee Books New and Old, Somerset, UK, 320 pages ISBN 0-0-5652-14-2.

²¹The Basics of Beekeeping, Moore Productions.

²²Full color postcards available at many outlets.

HINT OF THE MONTH

Some fruits, notably strawberries and peaches, can be almost tasteless. Put hulled, halved strawberries or peeled, peaches in serving sliced dishes. Then drizzle a tablespoonful or two of honey over the fruit and allow to stand for a while before serving. The honey will enhance the fruit flavor and keep it from being totally disappointing. A spectacular combination is orange blossom honey on strawberries. This combination just can't be beat!§



By GEORGE W. IMIRIE, JR. • 12705 Circle Drive • Rockville, MD 20850

To those having knowledge of the art of beekeeping prior to L. L. Langstroth's moveable frame hive just 130 years ago, 1853, I apologize.

The massive writings of Langstroth, Quinby, Huber, etc., emphasize the survival dependence of beekeeping on swarming. In those days of "boxes" and skeps, obtaining 5 pounds of honey was great, and often ended in colony destruction. Package bees and USPS-delivered queens were unknown.

Now, in 1987, we have the advanced technology of moveable frames, readily available bee packages and queens. Yet we still have swarming. Why?

Many have theorized too many bees in a crowded space, sort of like 5 children in a 1-bedroom house. It is noteworthy that the average human child departs from the comforts of his parent's spacious 5-bedroom home, perhaps with swimming pool, rec room, etc. to start his own life in a onebedroom apartment. Many others have theorized the natural transition from an old mother to a more vigorous daughter. Perhaps both are correct.

Have you noted that all honey bees like to finish off the 2nd story and attic, sometimes leaving the ground floor and patio empty?

A queen has only so many "motherly" pheromones to impart to her daughters. Could it not be in a large colony that the multitude of daughters are "lost" in their work and fail to detect the presence of "Mother", or not often enough to maintain family togetherness.

The workers (daughters) make all colony decisions. In their wisdom cannot they detect their "Mother" running low of sperm, hence recognizing her eventual failure? They further the continuance of their species by preparing new queen cells for colony continuance, and as loving daughters establish a new home for themselves and aging mother, so that the new youngsters can continue the breed.

Swarming is Nature's way of continuance of bees. However, we greedy humans, desirous of their sweet bounty, try many ways to stop swarming. We will never stop it, but perhaps partially control it by excellent management and yearly providing a colony with a new, young, vigorous queen.

Proudly, I rarely lose a swarm, and my colonies make much surplus.

It is management!§

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Queen Excluders and Honey Flow Management

By HENRI J. DE LANGE, M.D. • 1301 Spring St., #301, Seattle, WA 98104

We may start off by acknowledging that even without queen excluders bees do fine. For them these contraptions are not necessary. Honey will come in and brood will grow just fine without excluders. It is for their keeper's benefit that they are used. Queen excluders play a major part in obtaining surplus honey and keeping this honey at the best possible quality.

There are a couple of reasons why this is so. A queen excluder splits a hive in two parts for practical purposes. The lower part - where the Queen, brood and drones are, and the upper part where the honey is stored. In between is the excluder. The frames in the upper super should be newer and used only to store honey in for human consumption. The frames in the bottom are brood frames. Once a frame is used as a brood frame it should not be used as a honey super frame anymore. Unless, of course, we totally clean it up, remove all old comb and add a new sheet of wax foundation. Brood frames usually get quite dark from old cocoons and other material. Honey extracted from those frames appears darker colored and is not of the quality we want to produce. Drones have the run of the brood box and the scenario is just not as clean as it should be, and as it is in the supers above the excluder.

If you overwinter in two regular deep boxes, the first thing you do in early spring after the first brood buildup, is rotate the two deeps. The upper goes on the bottom board and vice versa. This is the time to inspect your old brood frames. Are there any that are getting too old? or irregular? As the cocoons stay behind after each young bee emerges, we wind up with progressively smaller worker cells. Are they getting too small? Are there too many drone cells? Replace the bad frames with full drawn comb from your stock of overwintered super frames, those will make new brood frames now. Obviously, select only frames with a regular worker Cell pattern. The frames removed get completely cleaned of all comb and are readied with a fresh sheet of foundation as replacement frames for your honey supers.

When the time arrives to super up, first the excluder is put on top of the second box. This prevents the queen, as well as the drones from running upstairs. You have to maintain it that way as the year goes on. Should the bees start a new queen above, and this happens, she will have to be removed.

Living in the city we don't want swarming. So particularly in early spring we need weekly inspections. Not only to assure no queen above the excluder, but also no swarming tendency from below. By rotating the frames below the excluder, we can keep their demand for brood space supplied for a while. Should they continue to want to swarm after all, it requires more drastic measures such as splitting, etc., but that is another subject.

In the Northwest

In Washington State, we have essentially two honey flows. One in the spring, April-May when the Maples bloom and one in Summer, June-July when the blackberries bloom. There is a third in the fall, but it requires moving the hives into the mountains to catch this fireweed flow. If the spring weather is good, we may have a considerable amount of early honey come in.

After the initial spring buildup and honey flow, the excluder has an additional function - the control of the amount of brood the bees raise. In the build up of the work force, there comes a moment of diminished return, in which further increase of workers would cause less surplus honey to be stored. It costs a lot of honey to raise brood. Obviously, we do not want the bees to use all the honey that comes in from the second flow to raise more brood, for a later flow, that may never come. They probably know this, we better give them credit, they know a lot more than we think. Yet in spite of this knowledge they have a tendency to make more workers than we need, if we let them. That is because they have different goals in mind than the keeper. So just before the start of the second flow, early June here, the excluder gets moved downward one story, over the bottom box. This

maneuver takes some doing, because we do not remove the second box, it stays right where it is. Consequently we have to first make sure that the queen is in the bottom box. We also want to put cells with eggs below and capped brood above, and if possible most drones below. This requires some reshuffling of frames between the bottom and the second box, as well as moving emptier ones from the sides to the middle. It also requires weekly checks above, during the first few weeks, so they don't start a new queen there from an egg you missed. You also need to check below, for possible late swarming tendency. Our late beemaster Roy Thurber would recommend putting a pencil or nail above the excluder, below the second box for a few weeks, to enable any hatching drones to escape.

Usually you can find the queen fast. Where you see eggs is where you look. You may want to try this using very little or no smoke. Smoke gets the queen scurrying away from where she was laying. If you cannot find her, you may have to look the next day. You don't want to start a full blown man hunt and get everyone upset. Another trick is to put an extra queen excluder on for a few days so you have one over the bottom and one over the second box. A few days later, look again where the eggs are. This is where the queen will be.

How long does the excluder stay over the bottom box? Till after you have gotten your honey harvested and all supers off the hive. For us, this is about the last week of September.

Also, by supers is meant everything from the *third* box on up. The second box stays on, honey, pollen and all. So at this stage we are left with the two bottom boxes again, separated by the excluder. Then, the excluder is removed from between the bottom two boxes. Whatever is in the second box is for the bees to winter on.§



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Moving ... Cont. from Page 302

the bees. Weak colonies should be placed more to the center and the stronger along the outer perimeter. The hives are loaded so that the frames are parallel to the road. This prevents them from flopping around excessively, which could injure or kill the queen. In moving large numbers of colonies, 3/4 ton flat beds ranging from 16-20 feet in length, to semitractors with 4 wheel trailers are employed. If you decide to use one of vehicles, these larger local regulations with respect to length and weight should be checked. Don't forget to check the States you are passing through. Often these trailers are covered with netting or plastic screen while they are traveling. This prevents any escaped bees from flying about. For the hobbyist, the back of a station wagon is sufficient. Since you aren't always able to drive right to the apiary site, we found a two wheel cart to be an invaluable tool. We use it moving the hive from the site to the vehicle and vice versa.

Hopefully, you've arrived safely, and are now about to unload your cargo. To avoid excess drifting, try to locate the colonies facing different directions, or at least by a shrub or a tree. This will help the bees in orienting and marking their colony when they resume flying. Before removing the "v" shaped entrance screen, smoke the colony. This drives the bees back and away from the screen. Avoid standing in front of the hive when removing the entrance screen, for the bees will exit as soon as they realize they are free.

Ph: 409-825-2312

In conclusion, we'd like to leave you with several helpful tips:

1. If the weather is extremely hot, plan to periodically stop and spray water on the hive. This will cool them and prevent overheating.

2. Should the bees clog the entrance screen and close off the hive's ventilation while traveling, sprinkle (spray) water on the screen using a sponge or water mister. This will cool the bees immediately and drive them back.

3. Should you break down while enroute, drive or have your vehicle towed to a shady location and allow the bees to fly, or otherwise make arrangements to keep them cool (see item 2).

4. You really shouldn't stop while transporting the bees but if you must. keep the motor running, for the vibrations calm the bees.

5. Drive Carefully!§



Answers to Testing Your Beekeeping Knowledge

- 1. False. Because the bottom board is open in front, it is normally recommended that the hive should be tilted forward slightly to prevent rain water from running into the hive. Having the hive sloping slightly forward will not affect comb quality. Bottom boards, however, should be level in the production of section comb honey.
- 2. **True.** All exterior parts of the hive, exposed to the weather, are normally painted to extend the life of the wood. The interior of the hive should not be painted, since the bees varnish it with propolis.
- 3. False. The migratory cover fits flush with the sides of the hive body and may or may not extend over the ends, which allows colonies to stack tightly together. This style of lid is used without an inner cover since they are easily re-

moved with a hive tool.

- 5. **True.** Combs within the hive body hang at right angles to the entrance and parallel to the length of the hive body.
- 6.D) Pine
- 7. C) 4-5/8 inches
- 8. B) 10 self-spacing frames
- 9. B) 7/8 inch, D) 3/8 inch
- 10. Apiary laws throughout the United States require that colonies be kept in moveable frame hives, permitting thorough examination of every comb for bee diseases.
- 11. Painting hives with light colors of paint is desirable since it prevents heat buildup in the hive during the summer. Dark colors absorb the rays of the sun and further contribute to overheating and demoralization of the colony when the weather warms.
- 12. A large proportion of the population making up a primary swarm have activated wax glands, since comb building is one of the first activities associated with survival after a new homesite is selected.
- 13. FOLLOWER OR DUMMY BOARDS: a thin board used in place of a frame when there are fewer than normal number of frames in a hive. Helps decrease the amount of burr comb built. EYELETS: Metal eyelets are used

when frames are cross-wired and wires are embedded into comb foundation for reinforcement. The eyelets are installed in the holes of the end bars to keep the wires from cutting into the wood so that the wires remain tight. RABBET: A recessed portion or ledge usually reinforced with a folded piece of metal in each end of the hive body from which frames (combs) are suspended.

14. There are two ways of adding honey supers to colonies: top supering or bottom supering. The advantages of top supering are: 1) requires less work; 2) only have to check the upper super to see if more supers are needed; 3) bees finish filling up a super before moving on to the next one; and 4) once a honey barrier is formed, queen excluders are not needed.

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

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WASHINGTON SCENE

By GLENN GIBSON • Minco, Oklahoma 73059

Four months of the 100th Congress and agricultural leaders are expressing deep concern about what might happen with international trade, the Farm Bill and how Congress will handle its business. A repeat of the 11th hour Continuing Resolution of the 99th Congress would be a disaster not only for agriculture, but the whole country as well. The double cap on our honey loan program that will cause all sorts of mischief is a good example of haphazard legislation.

The Budget Committee is the Villain

Over the years, several attempts to control the budget haven't been too successful. The Office of Management & Budget and the Council of Economic Advisers are the main budget control agencies in the Adminstration. The Congress has created a Congressional Budget Office and each House has a Budget Committee. In these committees is where the trouble begins. Budget procedures are difficult at best. Former Senator Mack Mattingly, Georgia, points out:

"Rules and procedures of the U. S. Senate do not adapt well trying to debate a trillion dollars worth of different items throughout the budget process."

Increasingly during recent years Congress has provided temporary funding to various agencies when appropriation bills are not passed on time. This allows the agency to function at the previous year's level until a new appropriation is approved. Last year's Continuing Resolution funded the entire government for the full fiscal year and included authorizing legislation.

One of the reasons for the increasing use of continuing resolutions is that the budget process includes three committees:

• Budget Committee — sets spending ceilings for the agency

• Authorization Committee — determines what programs and policies will be funded

• Appropriations Committees determines the actual amount of money to be appropriated

This means that funding programs and policies requires action of three committees in the Senate and House of Representatives. Compounding the problem are "turf" fights between authorization and appropriations committees.

These three committees must officially function in sequence. The Budget Committee action must be completed in both Houses before the authorization legislation can be considered on the floor. Authorization must be completed in both houses before the appropriations committee action can be taken on the respective



floors. This budget process of legislation clearing three committees in each house in the proper sequence is cumbersome and time-consuming. Senator Strom Thurmond:

"I think we should abolish the Budget Committee . . . if not . . . then we ought to combine the appropriations and authorizing committees."

I would favor the elimination of the Budget Committee since it is unable to accomplish its objectives.

Budget Committee Action on the Honey Loan

As I understand the budget process, the Budget Committee cannot kill our program outright without the help of the authorizing committees, but Congress can do all sorts of damaging things to programs under a continuing resolution. A move to terminate our program erupted suddenly in the House Budget Committee last spring. Fortunately, the move was defeated. Since some congressional nit-pickers have promised to try termination again, I will not be surprised if such a move surfaces this year.

What we hope you will do

We hope that honey producers will give us some assistance by working with beekeepers in your state in contacting your state's congressional delegation. Your state beekeeping association could give us a boost by writing all congressmen in your state. If this happens to be the first time you make contact, please give a brief explanation of the size and scope of the industry in your bailiwick. Individuals writing the first time should explain their connection with the industry. After the background introduction please follow through with recommendations to support the national programs. If you are uncertain about how to proceed or do not have up-to-date information, please contact me and I will do what I can to assist — regardless of your affiliation with any particular organization.§

Inner Cover... Cont. from Page 259

• Cold tolerance of the AHB

• Overwintering ability of the tracheal mite

• Producing European bees in an Africanized area

• Controlling Varroa in package bees

• Countering the AHB threat (not using the BRZ)

• Documenting drone flight areas with radar

• Effect of tracheal mites on HB longevity

• Effect of climate on Varroa infestation

• Controlling Varroa with chemicals

• Nest-site selection of European and Africanized bees

• Controlling tracheal mites, chemically

Whew! That's alot of information, but I'm only going to comment on a couple of aspects of this part of the meeting.

First, it seems that the AHB will survive further north than originally believed. How far? Illinois? Canada? Maybe. But it seems certain to be a bit further than Georgia or North Carolina. This re-evaluation of who will have to deal with this insect if/when it arrives, and what further changes this will entail in this industry are anyone's guess. But, the implications are obvious.

Second, researchers in various parts of the world either have, or are on the verge of, obtaining economic control of Varroa mite with chemicals. There are two qualifiers here though. One is that the term 'economic' does not mean complete. The other is that these chemicals are not registered for use in this country. Both important, and both needing further work.

There was another event going on during part of this meeting that I'd like to talk about too, the 'Televised Panel Discussion' held one evening. Moderated by Dr. James E. Tew, the members were Dr. Tom Rinderer, Dr. Wolfgang Ritter, and Dr. Alfred Dietz.

Made possible by an incredibly complex series of connections between OH State, a satellite and many reception centers across the U.S., it was probably one of the most high-tech honey bee presentations ever made. There were a few problems with the mechanics I'm told, but when you do anything on his scale - LIVE - there's bound to be a hitch or two.

The discussion focussed on the topics of Africanized bees, Varroa and tracheal mites, but the bulk of the questions phoned in, and probably the greatest interest was centered on the portion that explained the Bee Regulated Zone proposed for the Isthmus in Mexico. There was information presented, both during the conference and during this Discussion that was new, at least to me. I've already mentioned the northernmost limits this beast is expected to invade, and some of the discoveries on its' cold tolerance. The fact that Varroa may accompany it is not new, but certainly must be considered.

Techniques to monitor any 'leaks' in the zone were also mentioned, along with proposed efforts to mopup swarms that sneaked through. These were both new, and refreshing, to me. This information, along with reports of success in raising European bees in an Africanized area (see this issue), some positive aspects of the AHB (again, this issue), some promising chemical controls of both Varroa and tracheal mites, (as stopgap measures), and finally, a growing (but by no means complete!) consensus that the zone should be undertaken has led me to adopt a more favorable opinion of this whole enterprise.

The statement made by Dr. Rinderer, that to try, and fail, is certainly better than to not try at all (and thus certainly fail), is probably the basis of this whole concept. He also said that the cost, (about \$11 million to start, and \$2-4 million per year after that), was a relative figure. He's right you know. Relative to my salary, (and probably yours), this is an incredible sum. But compared to the cost of one more ABM missile, or completely redoing the security system in the U.S. Embassy in Moscow, it is a drop in the bucket.

There are no guarantees however. There never are when dealing with something as unpredictable as a living animal. Couple that with the combined egos of two national governments and the complexity increases beyond imagination. Fortunately, there are people who are paid (some rather well) to deal with all that foolishness. The other side, of course, is that you and I are the ones paying for all this, out of what ever salary we have left from paying for one more ABM missile and a new security system for the Embassy.

The Federal Government (or parts of it) seem convinced that this project should be pursued. They have a legitimate concern regarding U.S. Agricultural changes, and the jobs that will be threatened along with these changes. I'm not altruistic here, it's their jobs they're concerned about, not ours, I believe. Nevertheless, as I've already stated, there seems to be an increasing consensus that the BRZ should be tried. Of course, those that control the financial aspects of government have many other projects to consider, and the priorities they determine may or may not favor funding this particular project. This is the result of having to make a decision on short notice, and not having as much information as they may feel necessary to decide.

You're right. It may fail. But the sad fact is, we have to gamble that it won't – at least long enough to find answers to questions as yet unanswered. §





KOOVER'S KORNER

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

or the first 30 years of beekeeping my bees swarmed, although I tried to prevent it. Before I left the house to go to work I would tell my wife, "I got them fixed this time, they can't swarm." When I got home I would ask, "Did they swarm?" "Look under that bush," she would say. And sure enough, they pulled one on me again. Then I got wise. I ordered a book from England and it showed how to artificially swarm your bees when YOU were ready, not when the bees got the notion. I tried it and it worked. I did it that way each year thereafter, and it never failed. However this was in Southern California. Bees swarm in March down there. The weather is warm, like summer back East. The bees are in the midst of the main honey flow. If you lose a swarm then you can kiss a crop from that hive

goodby. I am going to tell you how. Lookand-read-and follow to the letter. Everything is spelled out, don't change a thing! If you do, don't blame me.



Colony ready to swarm

First, you need a ventilated escape-moving board. You can get that from your friendly ROOT

"Artificial Swarming . . . My Way!"

dealer. Install the bee escape and put a cork or piece of wood in the escape hole. Next, get 4 strips of wood and nail them on top of the rim, to get more space under the super that is going to sit on top of that escape board. Go to the hive that shows



Brood and queen cells above divider, old queen below.

intention to swarm. You better be early or they'll beat you to it. Instead of working hard they are sitting around just waiting for the big moment. That's where you come in. Set off the supers of honey they have produced and lift out one frame at a time, looking for the queen as you go. If she is not on the frame you took out, put that frame in the empty super you brought along, which is going to be the *new* brood chamber.

If you find the queen, keep that frame (with her on it), near the wall and keep an eye on her while you transfer the remaining combs to the new brood chamber. Having that accomplished, look for a comb with *all* sealed brood and let the queen walk onto that comb. You can do that within the brood chamber on the old stand. Now, fill up the brood chamber with the queen, combs of foundation to be drawn out, or empty drawn out combs you have on hand.

Put on a ventilated escape-moving board and stack on the supers of honey you have taken off. Any drones that may have gotten into the supers of honey while you were busy can go below into the brood chamber. Now, put *another* escape-moving board, with the rim you have fastened on top of the supers with honey. And on top of it all goes the brood chamber with the plugged bee escape.

What I forgot to tell you is this.



Original brood chamber on top. After new queen mates, colonies united.

That rim you nailed on should have a "V" shaped piece cut out of the rim to act as an entrance to the broodnest. That piece you cut out is also used to close the opening so no bees can get out. Close the entrance with the "V" shaped piece so the bees that are in the top super have to stay there. Close it up and walk away.

Here is what you have. Return-Continued on Page 316



There are two general situations which have led you to order one or. more queens for your colonies. You have either found a colony which appears to be queenless or you have decided that you want to replace the current queens with new ones.

Before we discuss the actual method of installing new queens, there are a few precautions which should be observed, especially if you are using a new queen for a colony which you believe is queenless. The six to eight dollars you have spent for each new queen is a worthwhile investment, but try to use high percentage methods of introduction to avoid spending this money for nothing, which is what happens when the colony rejects a new queen and kills her. This rejection most often occurs when there are queen cells present or when there is a virgin queen which the beekeeper did not see during the first examination of the colony. Before introducing a queen to a colony you believe to be queenless, be sure to destroy any queen cells that you find and check thoroughly for the for presence of a virgin queen. Virgins are smaller than mated queens and run around on the comb in a nervous sort of way.

If your queens arrive in the mail, and the weather is cold, rainy or

Vacuuming...Cont. from Page300

holes plugged for transport to the site where the hive containing the swarm had been moved. Then the plug in the 1-1/2" opening was removed and it became an entrance for the colony. Removal of the plexiglass/wood cover on the super of the vacuum box allowed addition of a regular hive cover. The complete operation took about 5 hours and only a few returning field bees remained at the house as a reminder that a colony had lived there.

Relatively few dead bees (2-4 handfulls) were found in the vacuum box, indicating that the procedure had not been very destructive. Some mortalities may have occurred from the clear plastic hose. It remained somewhat flattened from shipment and sometimes compressed when bent sharply. This trapped bees at the constriction. stormy, don't panic. Queens can be held for several days if necessary. Keep the cages in a dark, moderately warm location and put a small drop of water on the screen once or twice per day. You will notice that both ends of the queen cage are closed with corks. The theory here is simple: before placing the cage in your hive you will remove the cork on the end with the sugar candy, allowing the



bees in your hive to chew through the candy and release the queen. Do not remove the other cork/Here is a quick step-by-step method for installing a new queen.

• If you are replacing an older queen, go into the colony, find and remove her (that sounds better than kill her). If it takes a long time for you to find the old queen, and the bees

My neighbor supplied pipe support frames for plank scaffolding and a heavy duty saber saw. The planks made an excellent platform for the many pieces of equipment needed during the operation and the saw quickly exposed the bee colony. I consider the scaffolding indispensable for future honey bee removal jobs, because various levels of planks can be arranged for placement of equipment near the colony and the operator has ample solid footing to move about on. My neighbor and a friend watched from the ground during the operation and did not get stung. My neighbor was very pleased with the outcome and so was I. Although this was the first time I've tried this method, it was sufficiently successful to share my experience and equipment design with other beekeepers. I will certainly use it again if asked to remove other bees from a house.§

become aggressive, close up the hive and allow the colony to settle down for an hour or two.

· Remove the cork from the candy end and install the queen cage between two of the frames in the center of the brood nest. This can be done either by wedging the cage in between two combs, or by suspending the cage using a short piece of thin wire. The cage should be near the top of the combs with the screen facing down. Sometimes you will need to remove one of the frames to be able to fit the cage between two combs. Take out one of the end frames, shake the bees off. and store it indoors.

• After closing the hive, leave it alone for three or four days. *This is important*. The bees will sometimes *"ball"* a new queen when the colony is disturbed too soon. This means that they crowd around her and attack her until she is killed.

• After three or four days, open the colony, remove and check the cage to see if the queen has been released, replace the frame you took out earlier, and close the hive once again. Leave them alone for a few more days, when you can inspect the colony to see if the queen is laying. You should see eggs in the cells of the middle brood combs. When you see eggs you are back in business.§



Virginia to Host 1987 EAS Extravaganza August 5 - 8

The Eastern Apiculture Society will conduct its Annual Summer Conference on the campus of Virginia Tech in Blacksburg, Virginia. The formal conference will start Wednesday evening, August 5th and continue through noon on Saturday, August 8th, 1987. A short course will precede the conference, starting on Monday August 3ed, finishing on Wednesday, August 5th.

The program for this years conference feature will an outstanding array of speakers and educators. One such speaker is Professor Robert S. Pickard from University College, Cardiff England. He is recognized as a popular author, broadcaster and widely-travelled lecturer, as well as a gifted teacher and researcher. He will participate in both the short course program and as lead off speaker for the formal conference. Other speakers will include wellknown authorities such as Dr. Roger Morse of Cornell University, Steve Taber of Honey Bee Genetics in Vacaville CA and Dr. Anita Collins of the USDA Bee Research Lab in Baton Rouge LA, to mention only a few.

In addition to the formal conference lecture presentations, there will be an informative group of workshops. Dr..Bob Berthold is again taking the lead in organizing the workshop program. Topics for the workshops include sessions on candle making, wood preservatives, bee photography and the production and packaging of sourwood chunk honey. A demonstration on swarm biology and swarm handling - which encourages audience participation - is also planned.

The short course will emphasize the study of the biology and behavior of honey bees as it pertains to colony management. The first day will be directed to diseases of honey bees, from identification in the laboratory to recognition in the field. The second day will stress biology and behavior and its relationship to management, with the program of the third day directed to production and honey bee reprodu tion. Instructors for the course will include Drs. Rick Fell, Larry Connor, Jim Tew and Anita Collins, with additional lectures by Dr. Pickard and Steve Tabor.

Many exciting events have been planned to enhance the educational program. A special reception on the opening evening of the conference will be held, while a more informal bar-b-que and bluegrass picnic will be enjoyed the following evening.

Spouses may select an afternoon tour and luncheon to nearby Roanoke, Virginia. The group will be take a stroll through a farmer's market where fresh produce is sold amid art galleries and antique shops and tour the Roanoke Museum of fine arts, an old home converted into an art gallery.

Virginia is the home of four U.S. Presidents, and has a proud history. So plan not only on attending the conference, but also on taking some time to visit other areas of the state. There will be no better opportunity to visit historical Williamsburg or



Donaldson Brown Center for Continuing Education on the Virginia Tech Campus — Site of the 1987 Eastern Apiculture Society Conference.

hosted for lunch at the Roanoke Country Club and visit St. Andrew's Catholic Church, a national historic landmark decorated in a Gothic style,

QUEEN REARING KIT Raise your own queens! This kit guides you with complete step-by-step directions. Includes materials to rear unlimited numbers of queens and provides the opportunity to use your bees as a breeding stock. Only \$9.95 Postpaid. JURICA APIARIES 325 Wells St. • Johnstown, NY 12095

IAAD/news a quarterly newsletter devoted to beekeepers in developing countries. Articles on low technology beekeeping, honey trees for agroforestry, and resource information. \$10/year to IAAD, 3201 Huffman Blvd., Rockford, IL 61103; (815) 877-6266. Jamestown, to see Thomas Jefferson's home at Monticello or to take a leisurely drive down the Blue Ridge Parkway. With the exciting opportunities to learn, to renew old friendships and to make new ones, plan now on attending the Eastern Apiculture Society Conference in Blacksburg, Virginia, August 5-8, 1987. Don't miss this chance to sample Virginia hospitality.

For more information on the conference and/or facilities contact Ms. Karen DeBord, Continuing Education Center, Virginia Tech, Blacksburg, VA 24061, or Dr. Richard Fell, Dept. of Entomology, Virginia Tech. A detailed program and registration information will be available in the EAS Journal, as well as other bee journals later in the spring.



\star GENERAL NEWS \star



National Honey Board News

"EVANS/KRAFT CHOSEN" — Dan Hall.

The newly formed National Honey Board has a clear goal — to increase the consumption of honey in the United States, to support and expand existing domestic and foreign markets and to increase honey sales and profits.

At the first annual National Honey Board meeting in Longmont, Colo., Feb. 19-20, the Board's elected representatives took a step towards this goal by selecting Evans/Kraft, Inc., an advertising/public relations agency in Seattle, to help promote honey.

The Board selected Evans/Kraft after reviewing presentations made by four finalist agencies at the annual meeting. The finalist agencies were selected from proposals submitted by 16 agencies from across the country.

"THEY GET RESULTS" — Rodenberg

"Evans/Kraft stood out because they stressed how they could make a budget like ours really work," Harry Rodenberg, chairman, said. "They have worked with groups similar to the National Honey Board and have gained results — results the honey industry needs."

Evans/Kraft services more food commodity accounts than any agency in the United States. The agency's client list includes the Alaska Seafood Marketing Institute, the California Kiwifruit Commission, Northwest Cherry Growers and the Washington State Potato Commission. During their presentation to the members and alternates of the Board, the Evans/Kraft representatives focused on results achieved for similar commodity promotion groups. Since they began working for the California Kiwifruit Commission in 1981, for example, domestic sales of kiwifruit have increased 667%. Similarly, Evans/Kraft helped increase the sales of Northwest Cherries by 32% in 1986.

"In the next few months, Evans/ Kraft representatives will be working with honey industry leaders to outline a clear marketing plan for honey in 1987," Dan Hall, manager of the National Honey Board, said. "This plan will include guidelines for promoting honey to consumers and to the commercial and foodservice industries."

Specific promotional efforts may include cooperative advertising and merchandising support, Hall said.

During a National Honey Board dinner banquet, Patrick Boyle, administrator of the USDA's Agricultural Marketing Service, pledged his organization's support to the National Honey Board.

"Your effort represents an attempt by the honey industry to solve the problems it is facing by itself and reduce dependency on the Federal Government," Boyle said.

"If you are successful in increasing per capita consumption of honey by a few tenths of a pound, you will have been successful and the honey industry will be flying high," Boyle said.

Also at the annual meeting, the Board created an industry/producer relations committee to communicate the National Honey Board's activities to the honey industry and a compliance committee to help define and answer questions regarding the National Honey Board's assessment rules and regulations.

For more information on the National Honey Board and its programs, call (303) 776-2337.

Let's Buzz the Schools

Since spring has sprung, it is time

to be thinking about honey bees. Last year I spoke about an outreach program entitled "Let's Buzz the Schools". This program originated by Claudia Linkous, a North Carolina grade school teacher and John Ambrose, an Associate Professor at North Carolina State College and the Southern State Beekeeping Federation was adopted by the William H. Miner Agricultural Research Institute. Since that time, we have received many responses for the "Let's Buzz the Schools" booklet as well as schools asking for bee demonstrations.

With the problem of insecticide kills, imported honey and the many different bee diseases, the beekeeping industry is in serious condition. The majority of our problems come because people don't know how important bees are for pollination and for the existence of the nation's wildlife. 210,000 beekeepers in the U. S. currently operate just over 4.3 million colonies of bees, and these bees contribute over 19 billion dollars to the Agricultural economy of the U.S. Over 94% of these beekeepers are hobbyists.

The purpose of "Let's Buzz the Schools" is to educate the general public through their children, to the importance of the honey bee in everyday life.

This syllabus, "A Course of Study on Honey Bees and Other Insects for Students in the Elementary Grades" is prepared so that it may be used in Kindergarten through 5th grade by selecting various lesson plans.

What is unique about this outreach program is that you do not need a background in beekeeping. All necessary information is included in the 13-day activity packet such as background material, lesson plans, visual aids, and reference materials.

This syllabus, as well as bee demonstrations, are available on request by contacting Loretta Surprenant, Miner Institute, Chazy, New York 12921, (518) 846-8020.

Editor's Note: For a review of "Let's Buzz", see the August, 1986 issue of *Gleanings*.

\star PEOPLE IN THE NEWS \star

Eric H. Erickson New Director of the Carl Hayden Bee

Research Center IN Tucson, AZ Dr. Eric H. Erickson, the former Research Leader of the Bee Management and Entomology Research Unit, Madison, Wisconsin, who was transferred to the Carl Hayden Bee Research Center last August, was appointed Center Director there effective December 4, 1986. He replaced Dr. Marshall D. Levin who retired December 3rd. Along with the assumption of administrative duties, Dr. Erickson will continue to conduct his own program of research.

Dr. Erickson received his B. S. degree from Colorado State University in 1963, and his M. S. degree from the same institution in 1965. After a tour as a U. S. Army Medical Entomologist in Texas and Viet Nam, he was awarded his Ph.D. degree in 1970 from the University of Arizona and joined the Agricultural Research Service's Bee Laboratory at Madison in 1970. Dr. Erickson was appointed Research Leader there in 1978.

Dr. Erickson has over 100 scientific publications to his credit, including one book and several book chapters. The latest recognition of his research accomplishments was his selection as the 1986 recipient of the J. I. Hambleton Award for outstanding research by the Eastern Apicultural Society.

At Tucson, Dr. Erickson will serve as Research Leader for the former Honey Bee Nutrition and Pollination Units, which were recently combined. With these changes he will be responsible for redirecting certain aspects of the Center's research program; emphasis will be placed on developing new knowledge of fundamental honey bee biology. Future research will utilize, to the greatest extent possible, space age technologies and state-ofthe-art science to uncover new concepts relating to honey bee behavior, pathology, physiology, pollination and toxicology.

Southern States Beekeeper's Federation Meeting and Tour of England, October 17-26, 1987

• Fly round trip from New York to London via KLM Royal Dutch Airlines.

• Relax in deluxe motorcoach transportation to Cardiff, Plymouth and London.

• Feast upon an English breakfast each day.

• Lunch at Bath.

• Stay 2 nights at the first class Post House Hotel in Cardiff with dinner each night.

• Attend the joint meeting with the International Beekeeping Research Association at Cardiff University.

• Enjoy the Welcome Open House at the home of I.B.R.A.

• Meet Brother Adam, famous breeder of the Buckfest Queen, and lunch at Buckfest Abbey.

Stay one night at the Holiday Inn

overlooking beautiful Plymouth, with dinner.

• Sightsee at ancient Stonehenge with lunch along the way.

Stroll the streets of Oxford.

• Enjoy 6 nights accommodations at the lovely London Tara Hotel.

• Explore London for 5 days while attending the Honey Show at Portchester Hall.

For more information and a complete itinerary call: Lucas Travel Inc., Attention: Group Department, Inside North Carolina: 1-800-722-2159 or Outside North Carolina: 1-800-632-30370.

★ 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.

HONEY BEE GENETICS Breeder Queens at affordable prices, \$50.00 each. All artificially inseminated with selected drones. You should be improving your stock, now you can. Our stocks have been tested and selected by professionally trained bee geneticists with long experience.

Stocks selected for resistance to disease and gentleness. Call or write for information.

> 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.

★ FLORIDA ★

A short course on "Beekeeping" will be held at Hillsborough Community College, Dale Mabry Campus, Tampa, Florida, beginning May 23 through June 27, 1987. Saturdays from 9 until 1 o'clock.

This course is designed to introduce the beginner to the basic principles and procedures of handling the honey bee colony. Topics will include: installing package bees; management for honey production; dividing colonies; pollen trapping; queen rearing for the hobbiest; bee diseases and honey extraction.

The enrollment fee for this course is \$14.40.

For further information contact: Hillsborough Community College, P. O. Box 22127, Tampa, Florida 33622.

★ GEORGIA ★

The annual beekeepers short GLEANINGS IN BEE CULTURE course for beginners and more experienced beekeepers will be held on June 6 at the University of Georgia, Athens, Georgia. The meeting, sponsored by the Department of Entomology and the Georgia Beekeepers Association, will be from 8:30 a.m. to 4:30 p.m. Registration starts at 7:30 a.m. at the Chemistry Building Auditorium. Demonstrations of practical beekeeping will begin at 1:30 p.m. at the University Apiary on the Horticulture Farm located on Highway 53, six miles south of Athens, Georgia.

Topics and demonstrations will include honey bee biology and behavior, queen rearing and colony division, two queen colony system, management for honey production, honey house operation, recognition of bee diseases, package bee installation and handling of bees. The potential impact of Africanized honey bees and the parasitic asiatic mites on beekeeping in the U. S. will be highlighted.

The teaching staff will consist of several honey bee specialists, including well known commercial honey and queen and package bee producers from Georgia. The course fee is \$20.00 per person. Advanced registration is requested by June 4, 1987.

Requests for additional information, program and registration forms should be addressed to Dr. Alfred Dietz, Department of Entomology, University of Georgia, Athens, Georgia 30602 or telephone (404) 542-2816 or 542-8711.

\star ILLINOIS \star

The 97th annual Illinois State Beekeepers' Association mid-summer meeting will be held June 27, 1987, at the Holiday Inn & Holidome in East Peoria, Illinois. The conference will be hosted by the Heart of Illinois Beekeepers' Association.

Registration for the event will begin at 8:00 a.m. with the sessions commencing at 9:00 a.m. Coffee will be provided at the registration table. Registration fee will be \$2.00 per person payable at the door.

The schedule for the day's events will be:

- 9:00 Welcome and Invocation
- 9:30 State of the State in Apiculture Eugene E. Killion, IL Dept. Ag.
- 10:00 Legal Aspects of Beekeeping, Kenneth L. Ott, Attorney
- 10:45 Summer Management and Honey Promotion — Phil May, Commercial Honey Producer, Harvard, IL
- 11:15 Bavarian Wax Art Roberta and Jim Rady, Anderson, IN

- 12:00 Lunch
- 1:00 The Africanized Bee/ Beekeeping in Venezuela — Dr. Richard Helmich, USDA Honey Bee, Baton Rouge, LA
- 3:25 The Honey Bee, A Wonder of God's Creation — Lloyd A Lindenfelser
- 3:55 Closing Alfred E. Trost, President, ISBA

The buffet style lunch planned at noon requires advanced reservation prior to June 15 at a cost of \$7.30. Checks for the buffet are payable to HEART OF ILLINOIS BEEKEEP-ERS' ASSOCIATION. Buffet reservations will not be available at the registration table. Buffet reservation checks, as well as conference inquiries, can be forwarded to Robert J. Dubois, Secretary, Heart of Illinois Beekeepers' Association, 423 North Lawndale, Washington, Illinois 61571-1647.

Special room rates are being offered by the Holiday Inn for conference attendees. Room rates will be \$45 per night (plus tax) for either a single or double occupancy. Room reservations are to be made directly with Holiday Inn & Holidome, 401 North Main Street (Exit \$95-A on I-74), East Peoria, Illinois 61611. (309) 699-7231. Reservations received after May 27 will be provided on a space available basis.

The conference is open to the public.

\star INDIANA \star

The Indiana State Beekeepers Assoc. will hold its annual spring meeting on Saturday, May 9, 1987 beginning at 9:00 a.m. at the LaFontaine Community Center, LaFontaine, Indiana. Registration and refreshments between 8:30 - 9:00 a.m. Registration fee is \$1.00 per person and \$2.00 per family.

The guest speakers will be: Ron Dahlke of Sodus, Michigan, who will speak on "Creative Honey Marketing" and Henry Harris, John Haskett and Don Shenefield.

Our Indiana Honey Queen, LeAnn Miltenberger, will be an added feature for the day.

At 1:00 p.m. a trip to the bee yard is planned with the following topics being presented; Brood averaging, splits, queen banks and comb honey production, by Don Shenefield, John Koch and Duane Rekeweg. Veils, gloves and protective gear should be brought along by those going to the bee yard.

In case of rain, John Haskett will present proper equipment assembly and Don Shenefield will show his beekeeping slides.

A raffle is being planned and will include a State Assoc. solar wax melter as well as other donated items.

A carry-in dinner will be held at Mississinewa Reservoir. Drinks will be furnished by the Northeast Indiana Beekeepers Assoc.

For further information contact: Phil Juengel, Box 37, Preble, IN 46782. Phone (219) 547-4260.

* LOUISIANA *



Kristina Owen, 18, of Shreveport, has been crowned the 1987 Northwest Louisiana Honey Queen.

Miss Owen was crowned by 1986 Northwest Honey Queen Jana Parker of Bossier City, in ceremonies at a recent meeting of the ArkLaTex Beekeepers Club.

As the Northwest Louisiana Honey Queen, Kristina will make numerous appearances throughout Northwest Louisiana representing the area's honey producers and beekeepers. During her term as queen, she hopes to inform the public of the importance of honey bees "and their keepers" and of the many uses and benefits of locally produced hive products.

Kristina is the daughter of Mr. and Mrs. Mel Own of Shreveport, Louisiana. She is a senior at Caddo Magnet High School and will attend Centenary College in the fall.

★ MARYLAND ★

The Maryland State Beekeepers Association will be holding their Summer Meeting/Workshop, July 24-25 at Mt. Saint Mary's College in Emmitsburg, Maryland. Enjoy handson workshops (three of them!), live bee demonstrations, top-notch speakers, games, films, equipment displays, and opportunities galore to talk with MD, VA and PA beekeepers in a relaxed, scenic atmosphere. Dine on delicious "all you can eat" meals, enjoy the use of campus recreational facilities, savor your favorite honey beverage at a Mead and Cheese Reception, sleep in the airconditioned comfort of the college's apartments, and tour the historic Gettysburg battlefield.

The cost for all of this is only \$35.00 per person plus \$7.00 for the optional Gettysburg Battlefield tour, but there is a \$5.00 late fee for reservations received after June 26th. Registrations received by July 19th will be confirmed by mail. For more information or to receive a registration form, contact Ernest Miner at (301) 898-9290 or Wade Lawrence at (301) 898-5960, or write to: Maryland State Beekeepers Association, ATTN: Summer Meeting, 10814 Daysville Road, Frederick, Maryland 21701.

★ OHIO ★

ATI/OHIO STATE UNIV.

Summer Sessions Schedule, 1987 •June 15-19, 1987 — Honey Bee Queen Production, Practical class discussing queen biology and production techniques. Students assigned individual colonies and nuclei.

•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 sub-tropical beekeeping.

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

\star OBITUARIES \star

Joseph F. Dolezal, Sr. 1895-1987. Passed away February 16, 1987. He owned and operated Dolezal Apiaries at Lincoln, Nebraska for the past 65 years where he made and sold bee supplies. He was a Nebraska State Bee Inspector in the 1930's through 1940 and won numerous Bee & Honey prizes at the Nebraska State Fair as well as Honey prizes at the different National Honey shows.

His son, Joe Jr., of Lincoln, Nebraska is continuing the business as a hobby. Alan W. Woodrow, 1902-1987. Dr. Alan W. Woodrow, a retired USDA apiculturist died February 20, 1987 in Tucson, Arizona. Born and raised in Xenia, Ohio, he received his B. S. degree from Ohio State University in 1927 and his Ph.D. in apiculture from Cornell University in 1935.

After graduation, he joined the USDA at its Intermountain States Bee Lab, Laramie, Wyoming, where he studied AFB and its transmission and effects. In 1936 he was transferred to the Pacific States Bee Culture Lab in Davis, California where he began his research on pollination and bee behavior. In 1942, he was appointed apiculturist in charge at the U.S. Legume Seed Research Laboratory at Columbus, Ohio where he was a member of a multidisciplinary team studying red clover seed production. In 1953 he joined the staff of the Bee Lab (now the Carl Hayden Bee Research Center) at Tucson, Arizona. Here he worked on pollination, foraging behavior, physiology and participated in the development of propionic anhydride and butyric acid as substitutes for carbolic acid for repelling bees. He also carried on research on toxicity of pesticides, wax metabolism and other similar research problems. He also taught a course on the honey bee at the University of Arizona for a number of years. He retired in 1967.

Dr. Woodrow is survived by his widow, Alice, his son Thomas W. of Tucson and daughter Mary Asberry of Colorado.

KOOVER ... Cont. from Page 310

ing fielders will all go below. They are relieved of their nectar and pollen and keep on working. Younger bees will start cleaning the empty combs or start drawing foundation. Next morning, bees are working like a new swarm. Up above, you can pull the plug out of the entrance. Fielders will pile out and go back down below to work in the old broodnest on the stand, while the nurse bees will stay with the brood. The first queen out will kill the sealed queens in their cells. In due time, she will go out to mate and you will have to decide what to do. You can set that top super with its young queen on a new stand or break down the hive and set the top broodnest on THE LOWER ONE WITH THE ESCAPE-MOV-**ING BOARDS REMOVED.** There will be no fighting, for they will all have the same hive odor. If you are unsure, keep one escape board between the upper and lower brood-

Melvin A. Pellett, passed away February 4, 1987 at his home in Atlantic, Iowa at the age of 80. Melvin, with his wife Elizabeth, had been the proprietors of Pellett Gardens for 50 years. Pellett Gardens was well known to beekeepers throughout the world for sale and distribution of honey plants and seeds. Melvin was the son of Frank C. Pellett, field editor of the American Bee Journal for many years and author of American Honey Plants. Melvin followed his father's interest in finding honey plants adapted to the many climates and soils of the U.S. He made them available to beekeepers through his annual catalog of trees, shrubs and flowers, especially selected for nectar. He wrote many educational articles for the American Bee Journal and Gleanings in Bee Culture.

Edwin W. Selfe, 85, of Monroeville, Ohio, died on February 16, 1987 in the Bellevue, Ohio hospital after a brief illness. He was a lifelong beekeeper and a former member of the Ohio State Beekeepers Association. Although nearly wiped out by the 8-county aerial spraying a few years ago, he continued commercial honey production for several years afterward. Besides a beekeeper, he was Lyme School Clerk-Manager for 38 years, 12 years on the Huron Co. Election board, and served as Zoning Inspector and Clerk of the Lyme Township Zoning board from 1952-1984. He was a member of the Lyme United Church of Christ for 74 years. He is survived by his wife Janet, and one sister.

nests for another day, but it's just that much more work.

As you will notice from the pictures, there are many ways to use the lifted brood with its queen cells. You can make a new hive right on top of the old one. You can make one or two nucleus hives on top of the old broodnest and use the rising warm air from below to prevent chilling the brood above. And all the time your bees keep working, for their swarming urge has been fulfilled. The identification boards and landing boards are my idea, but the artificial swarming technique, as I said before, came from England. I still say, in England the Amateur Is King. Twenty thousand strong, with only 400 commercial keepers specializing in pollination. KOOVER's Korner is for amateurs. Those who keep bees for the pleasure they derive from them. So, say goodby to all your swarming worries and keep your bees working to get you a big crop of honey.§

☆ Classified Corner ☆

Classified rates: 49¢ per word, each insertion payable in cash in advance. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) counts as one word. Not less than 10 words accepted. Copy or cancellation orders **MUST** be in by the 1st of the month preceding publication (Example: January 1 for February publication). If your order has missed the cut-off date, your ad will appear in the following issue. Proof sheets available on request for an additional 2-word charge. Send classified ads to: The A.I. Root Co., Attention: Cyndi Stephens, Class. Ad. Mgr., P. O. Box 706, Medina, Ohio 44258-0706.

MAGAZINES

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

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 INTER-NATIONAL BEE RESEARCH ASSOCI-ATION? 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.

DAIRY GOATS — For milk, pleasure and profit. Excellent for children, women and family! Monthly magazine \$18.00 per year (\$25.00 Foreign). Sample Copy \$3.00. DAIRY GOAT JOURNAL, Suite 226, 401 N. Broad St., Philadelphia, PA19108.

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. 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.

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).

WANTED

Candle mold, 12" tapered, 6" or 8" candle unit preferred. Roy Wallace, 4805 Richard Avenue, Baltimore, MO 21214. (5/87)

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