GLEANINGS IN BEE CULTURE MAY '88

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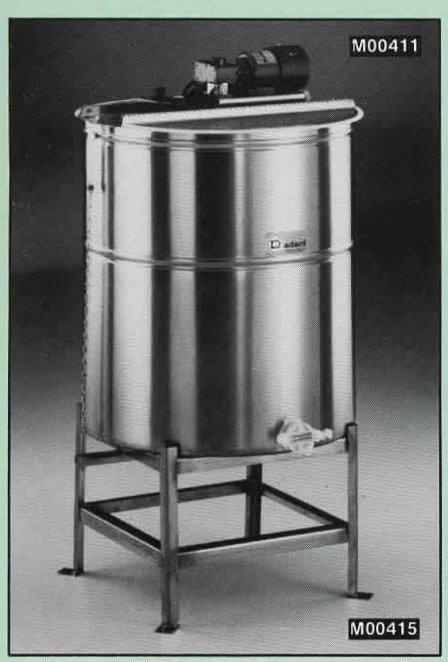

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MAY
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(ISSN 0017-114X) Vol. 116, No. 5

115 Years Continuous Publication by the Same Organization

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NEXT MONTH

June is the classic beekeeping month — along with gardening, vacations, mowing lawns and sitting on the front porch (if you're lucky enough to have one) sipping something cool.

If all has gone well, there should be a crop to extract this year, with luck, pretty soon! So, we're going to take a brief look at some of the mishaps that can befall a typical kitchen extracting operation — before they happen — so you can avoid (or relive) some of these sticky messes!

Also, the Africanized honey bee has not gone away, and, in fact, is still working it's way north. What happens when this critter arrives? What can we expect? With all the press stories and various reports from U.S. experts there is a whole range of behaviors and situations that we can expect. Next month we have a wide variety of first-hand accounts from experts and regular beekeepers who have witnessed the arrival and establishment of the AHB in several countries. These reports range from the worst — to far less than the worst— and certainly will give us some insight as to what to expect, and how to successfully deal with this real challenge.

Plus, we'll take a somewhat classical literary view of beekeeping — a quick look at the more poetic side of this gentle art. A balance we all need on occasion.

And, of course, our regular columnists, market reports, News, Events, and the rest of the Best. Next Month, in B*ee Culture*.

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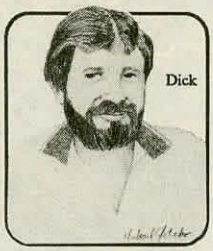

THE A.I. ROOT CO., Publishers
John Root, Publisher
623 W. LIBERTY STREET
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Subscription Rates: United States, one year, $12.49; two years, $23.99. **Newsstand Price: $1.95.** Other countries (U.S. Currency only) $6.00 per year additional for postage. Remittance should be sent by post office money order, bank draft, express money order or check. Published monthly. Discontinuance: Subscription stopped on expiration. Change of Address: Fill out and return form contained inside issue. Articles are solicited. Stamps should be enclosed to insure return of manuscript to author if not printed. *Opinions expressed by the writers in columns or articles are not necessarily those of the publishers.* Advertising rates and conditions sent on request. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, over the years few complaints have been received. Microfilm copies available at: University Microfilms, Inc., 300 North Zeeb Road, Ann Arbor, Michigan 48103. Second Class Postage Paid at Medina, Ohio and additional offices.

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THE INNER COVER

History repeats itself. That's one of the things wrong with history.
Clarence Darrow

(Or, put another way, History teaches us the mistakes we are going to make.)

Years ago, some bright scientist discovered that if you applied organic poisons (like arsenic) to apple trees during the growing season, you could control many of the pests that ate both apples and apple leaves. This discovery, like gun powder and nuclear energy, has certainly been a mixed blessing.

On one hand it was great for both growers and eaters of apples. No more fruit worms, apple maggots, beetles or other pests eating away the inside of a well formed (read *pollinated* here) apple. Likewise, there were far fewer aphids, thrips, spider mites and leafhoppers chewing, rasping and sucking the life out of the leaves.

With more healthy leaves on the trees, greater amounts of building material were funnelled into those apples that, in turn, were not being destroyed by their particular pests.

Growers were able to produce more apples that were in better condition for us eaters. Better apples commanded a higher price, and since there were more of them the bottom line for apple growers increased dramatically.

Very shortly it became apparent that spraying apple trees while they were in bloom was not such a great idea. It killed honey bee pollinators just as thoroughly as it killed pests. And, although it seems elementary now, it took time to convince growers that spraying during bloom meant no bees, no pollination, reduced fruit set and reduced yield. Threaten the profit of a business and it will change or die. Most changed.

However, the precedent had been set. There were means available to protect any crop from any insect. Just find the right chemical, put enough of it on, and your problem was solved.

But there is another tale to tell here.

Insects, and their mite cousins, did not take this onslaught lightly. Their ability to adapt to changing environments over millions of years began to hold them in good stead.

A spray application would kill 99.9% of the pests to which it was applied, but the remaining .1% kept right on eating and reproducing. Soon, growers couldn't kill these creatures even when applying two, three or four times as much chemical. The insects had developed a chemical immunity. So, next step — develop a new chemical. But alas, for both growers and eaters it was the same story.

A pest's ability to develop pesticide resistance was hastened by two key factors. The first was the erroneous belief that every last pest in an orchard must be dead. It was felt that if you could find even one pest, your crop was threatened. Therefore, 100% control was sought. If one quart/acre wasn't 100% effective, try two, or three, or even six. Essentially, the philosophy was — if one is good, more must be better.

The second factor was that growers began routine spraying when there weren't high populations of pests present. Statements like, "You can't be too careful", and "I don't want 'em to start anything", were heard. So even low populations of pests were subjected to sprays on an almost continual basis. It became comical — if you have a perverted enough sense of humor — spray, kill, spray some more, kill some more . . .

At its worst, growers were using up existing chemicals faster than

Continued on Page 302

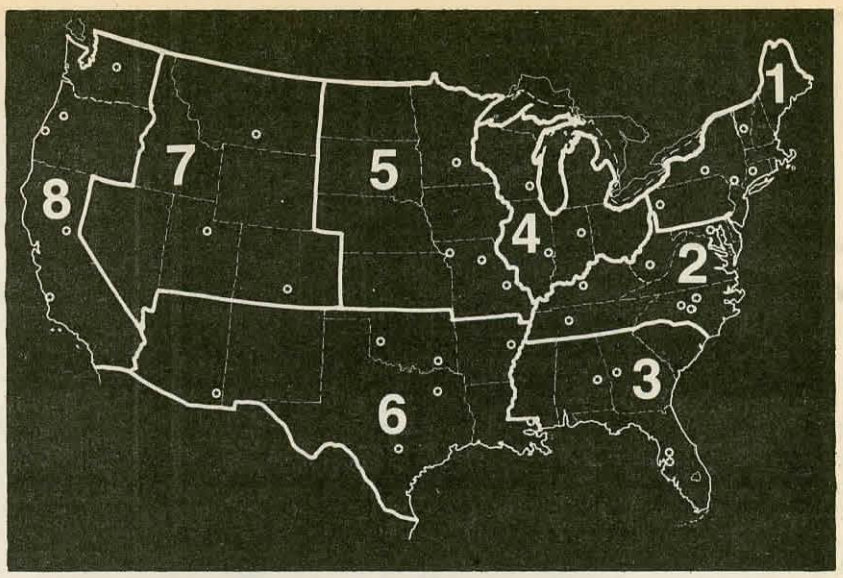
COVER . . . When an ideal new home can't be located, or there are several choices with no single choice better than the rest, a swarm will often choose to stay right where they are. These outdoor colonies seldom live more than one season.

Photo by Ed Weiss

May Honey Report

May 1, 1988

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



Wholesale Extracted	Reporting Regions									
Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	1	2	3	4	5	6	7	8	R	A
60 lbs. (per can) White	35.00	40.75	36.60	24.00	50.00	35.75	37.25	41.55	24.00-50.00	37.89
60 lbs. (per can) Amber	33.50	36.64	34.90	22.20	47.50	31.83	38.00	36.50	22.20-47.50	34.85
55 gal. drum/lb. White	.53	.62	.61	.44	.55	.60	.50	.61	.40-.69	.57
55 gal. drum/lb. Amber	.50	.49	.46	.37	.50	.53	.55	.52	.34-.60	.50
Case lots — Wholesale										
1 lb. jar (case of 24)	26.70	30.20	26.00	23.48	26.75	23.82	30.00	29.15	22.80-35.04	26.93
2 lb. jar (case of 12)	25.40	26.88	24.50	21.50	22.15	23.30	31.10	29.70	21.00-32.40	26.08
5 lb. jar (case of 6)	28.90	25.05	24.10	22.95	26.50	24.26	25.30	25.50	22.95-27.80	25.41
Retail Honey Prices										
1/2 lb.	.90	1.01	.90	.77	.91	.85	.95	.89	.75-1.29	.91
12 oz. Squeeze Bottle	1.35	1.49	1.49	1.29	1.32	1.24	1.25	1.33	1.14-1.79	1.37
1 lb.	1.45	1.85	1.54	1.49	1.57	1.51	1.49	1.53	1.39-3.00	1.62
2 lb.	2.65	2.99	2.61	2.49	2.55	2.58	2.84	3.15	2.40-3.70	2.77
2-1/2 lb.	3.35	4.04	3.25	—	3.30	3.09	3.75	2.25	3.00-4.85	3.47
3 lb.	4.00	4.08	3.75	3.33	4.07	3.90	3.59	3.69	3.25-4.63	3.82
4 lb.	4.97	4.58	4.30	—	4.65	4.55	4.49	—	4.25-5.00	4.61
5 lb.	6.00	5.63	5.67	5.75	5.75	5.40	5.75	5.68	4.75-7.00	5.64
1 lb. Creamed	1.75	1.59	1.89	1.60	1.60	1.45	1.80	1.59	1.39-1.89	1.61
1 lb. Comb	2.28	1.86	2.25	2.22	2.00	1.98	2.69	2.29	1.79-2.50	2.12
Round Plastic Comb	1.85	1.99	2.25	1.85	2.00	1.67	1.85	1.65	1.60-2.50	1.90
Beeswax (Light)	.78	1.17	.78	1.10	1.02	.85	.95	2.10	.65-1.25	1.21
Beeswax (Dark)	.75	1.03	.70	1.05	.90	.75	.85	1.00	.60-1.10	.86
Pollination (Avg/Col)	27.50	20.00	20.00	27.50	18.00	19.50	23.00	19.25	12.50-30.00	21.75

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 $1.39-$3.00 and the average price across the country is $1.62.

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

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

Region 1.

Price Index .86. Sales steady to increasing due to short supply and steady demand Spring conditions good to excellent, feeding required in some areas. Some losses reported. Mites still causing concern. Spring supply of bees questionable.

Region 2.

Price Index .91. Sales steady to increasing a bit, prices strong and increasing some. Spring build-up full steam, with most areas reporting strong colonies and minimal winter loss. Imported honey still evident in many large stores.

Region 3.

Price Index .87. Sales slow to steady, prices steady. Cool, wet spring has slowed some early crops but outlook good. Colony loss high in some areas for unknown reasons. Mite situation unresolved.

Region 4.

Price Index .67. Sales slow, prices steady to dropping. Winter losses in some areas high, with tracheal mite suspected as cause. Spring conditions appear good. Ample moisture and fair weather pointing to good crop.

Region 5.

Price Index 1.00. Sales and prices strong, due to local shortages and constant demand. Mild winter and good spring point to strong crops but some local areas will still need feeding.

Region 6.

Price Index .79. Sales and prices weak but improving slightly. Spring build-up strong with strong early flows. Winter loss heavy in some areas with tracheal mites suspected, but not confirmed.

Region 7.

Price Index .92. Sales strong with prices steady. Overwintered colonies strong for most part but late snow may retard mid-spring flows. Very early flows strong with warm weather and adequate moisture.

Region 8.

Price Index .92. Prices and sales varied. Very strong southern areas, weaker in north. Colonies in either poor or good condition — seems to be no average. Pollination in full swing in southern areas, apples, avocado, etc.

ANNUAL HONEY REPORT

Once again, *Bee Culture* brings you our annual review of honey prices throughout the U.S. for the past year. Though intended for individual marketers, it lends itself to packers and importers, too. in a market as competitive as ours, price is an excellent indicator of demand in all but the largest outlets.

Large grocery chains and even larger grocery wholesalers are affected far less by seasonal or holiday demand (and thus supply) than small retailers or individual suppliers. Because of this, large honey producers, packers and importers who supply these large wholesalers are not able to command higher prices as demand increases seasonally, nor in areas where retail prices are generally higher. A two sided coin this, even though selling price is low, demand is constant, thus making yearly budgeting easier, and production plans more efficient.

For the small retailer or individual beekeeper, seasonal and geographical variables can play a key role in budgeting and planning. These factors affect sales prices at all levels, whether selling 55 gal. drums to packers or 1 lb. jars from your house.

Geographical

Let's begin with an analysis of honey prices in the eight geographical regions we cover each month. Chart 1, similar to our monthly honey report, is the compilation of all data reported for the months May, 1987 through March, 1988 — eleven months.

For instance, the average retail price for a 12 oz. bear, over 11 months for region 1 is $1.41; region 2 is $1.39 and on across the row for the remaining regions. On the far right side of the chart, in the column labeled "R", are listed the range of prices, low to high, drawn from each month. The farthest column, labeled "A", is the average price, across all regions for the time studied.

The price range for our 12 oz. bear is $1.25—$1.99, with the yearly average $1.53.

As you study chart 1, geographical differences become very evident. These are due to several reasons: cost of living, and production in a particular area, population (and thus demand, or sales potential), and production potential — high production (both in numbers of colonies and production/

"The business of America is Business."

Calvin Coolidge

Chart 1.
Average prices for commodities listed for each region of the study across all months.

	1	2	3	4	5	6	7	8	R	A
60 lb. White	41.34	39.52	32.80	30.52	28.85	36.31	38.96	40.14	21.00-45.00	36.06
60 lb. Amber	40.02	35.99	30.37	25.35	30.96	32.38	36.39	35.68	19.80-43.00	33.39
55 gal. White	.56	.57	.55	.49	.48	.61	.58	.54	.41-.69	.55
55 gal. Amber	.53	.49	.49	.41	.46	.51	.53	.46	.34-.65	.54
1 lb. jar (24)	27.96	25.60	25.78	25.57	23.22	24.44	25.93	27.49	20.56-30.60	25.75
2 lb. jar (12)	26.86	23.95	24.47	23.16	23.16	23.70	27.23	28.13	20.56-31.15	25.08
5 lb. jar (6)	29.72	25.93	20.81	25.19	24.93	24.88	25.75	27.05	22.25-32.25	25.53
1/2 lb.	.96	.92	.84	.82	.86	.84	.84	.89	.75-1.12	.87
12 oz. Squeeze	1.41	1.39	1.35	1.36	1.21	1.23	1.29	1.33	1.06-1.63	1.32
1 lb.	1.53	1.65	1.46	1.58	1.47	1.49	1.54	1.54	1.25-1.99	1.53
2 lb.	2.67	2.82	2.65	2.84	2.55	2.68	2.79	2.43	1.82-2.99	2.68
2-1/2 lb.	3.49	3.59	3.60	3.35	3.17	3.13	3.48	3.25	2.27-4.13	3.38
3 lb.	4.02	4.12	3.57	3.27	3.50	3.94	3.82	3.43	3.23-4.35	3.71
4 lb.	5.00	4.70	5.17	3.99	4.67	4.62	4.73	4.40	4.00-5.89	4.66
5 lb.	6.39	5.65	5.97	5.75	5.69	5.32	5.58	5.45	4.99-6.75	5.73
1 lb. Creamed	1.75	1.54	1.61	1.56	1.72	1.53	1.60	1.58	1.15-2.49	1.61
1 lb. Comb	2.29	1.88	2.61	2.49	1.81	1.95	1.93	2.30	1.49-3.00	2.16
Rnd.Plas.Cmb.	1.95	1.98	1.84	1.84	2.04	1.73	2.21	1.65	1.10-3.00	1.91
Beeswax (Lt)	1.06	1.08	1.02	.98	1.02	.87	.88	1.12	.60-1.82	1.00
Beeswax (Dk)	.90	.89	.88	.80	.82	.78	.76	.94	.50-1.15	.85
Pollin. (Avg.)	27.02	15.73	19.00	27.37	16.29	20.29	23.00	23.73	15.00-30.00	21.55

Price Index For:	1	2	3	4	5	6	7	8
Wholesale	1.00	.91	.81	.78	.79	.85	.93	.96
Retail	1.00	.96	.98	.92	.91	.90	.95	.90
Total	1.00	.88	.82	.83	.79	.85	.92	.94

Chart 2.
Price Index totals for all regions for the duration of the study.

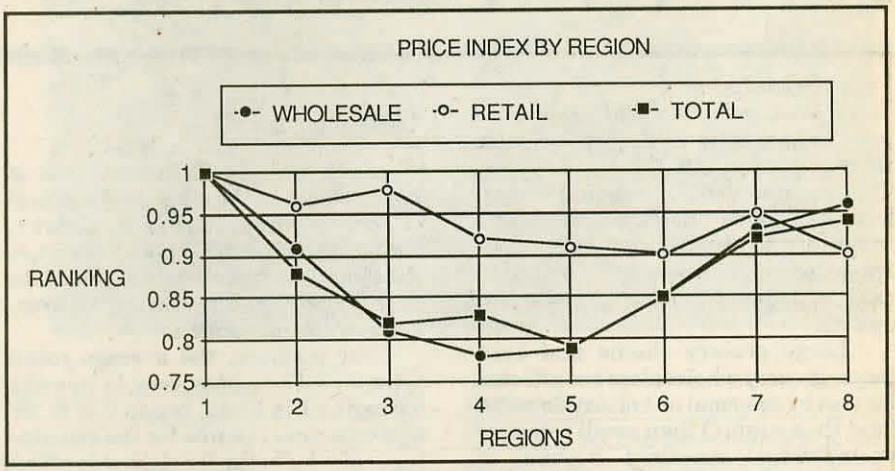
colony) coupled with a low population will definately affect sales potential.

But how do regions, as a whole for all commodities stack up against each other? Chart 1 does not show this well, but chart 2 ranks each region. Region 1 has the highest overall total, here labeled price index for all three catagories — wholesale, retail and total.

Looking first at wholesale, region 1 has a price index of 1.00; region 2, .96; region 7, .93 and so on. For retail price index, region 1 is again 1.00; region 3 is .98; region 2, .96 and continuing. The total row is identical to the wholesale row in ranking, which is consistent with the results of the recent survey of the National Honey Board in the categories of use. Their results indicated that ranking was generally East coast highest, West coast next followed closely by the mountain region.

This is illustrated in Graph No. 1, below.

While retail prices are not as seriously affected by geographical region, wholesale prices are significantly lower in regions 3, 4, 5, and 6. So low in fact, as to greatly alter the total price index in those regions.



Graph 1.
Graphical representation of Chart 2.

Seasonal

The recent survey of the Honey Board also reported that sales begin to rise starting in October, peak in January, then taper off slowly until May and drop rapidly after that.

Our data, though not exactly the same, is very similar to that report. Chart 3 shows the average price of each commodity from all region across each month of our report.

Obviously, the range and average of each commodity corresponds to chart 1 so are not reported here. To read the chart, lets look again at our 12 oz. honey bear. The average retail price of a honey bear in May, 1987,

Chart 3.
Average prices for commodities listed for each month of the study across all regions.

	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR
60 lb. White	38.66	35.71	36.60	37.92	35.40	35.20	36.60	35.18	38.08	35.80	34.45
60 lb. Amber	35.94	34.44	33.45	34.70	32.24	33.10	31.93	31.63	34.95	32.34	31.20
55 gal. White	.55	.54	.55	.56	.54	.55	.56	.55	.56	.56	.52
55 gal. Amber	.51	.48	.50	.50	.48	.49	.49	.48	.48	.47	.46
1 lb. jar (24)	25.74	26.98	23.73	25.20	25.48	26.63	25.84	26.65	26.06	26.92	25.92
2 lb. jar (12)	25.17	25.32	23.86	23.67	24.93	26.24	24.67	24.56	25.06	25.72	25.31
5 lb. jar (6)	25.69	25.82	25.61	25.83	25.94	26.26	25.84	25.47	26.52	26.02	25.58
1/2 lb.	.88	.88	.87	.84	.86	.86	.88	.89	.91	.92	.87
12 oz. Squeeze	1.27	1.29	1.24	1.32	1.30	1.32	1.35	1.36	1.39	1.39	1.31
1 lb.	1.57	1.58	1.48	1.54	1.49	1.49	1.51	1.55	1.55	1.62	1.54
2 lb.	2.70	2.82	2.71	2.67	2.68	2.68	2.69	2.74	2.72	2.75	2.69
2-1/2 lb.	3.46	3.21	3.43	3.40	3.37	3.45	3.47	3.32	3.62	3.36	3.42
3 lb.	3.88	3.73	3.72	3.69	3.71	3.59	3.72	3.76	3.75	3.68	3.75
4 lb.	5.00	4.63	4.77	4.72	4.91	4.78	4.99	4.98	4.84	4.51	4.51
5 lb.	5.75	5.71	5.68	5.70	5.71	5.57	5.79	5.82	5.86	5.68	5.65
1 lb. Creamed	1.62	1.56	1.71	1.57	1.55	1.63	1.61	1.65	1.64	1.63	1.58
1 lb.Comb	2.18	2.00	2.09	2.12	2.19	2.27	2.29	2.39	2.21	2.08	2.19
Rnd.Plas.Cmb.	2.05	1.76	1.83	2.12	1.98	1.87	2.01	1.96	1.81	1.75	1.85
Beeswax (Lt)	1.01	.86	.92	.91	.90	1.14	.97	1.18	1.06	1.19	1.03
Beeswax (Dk)	.94	.70	.83	.80	.81	.96	.80	.89	.88	.88	.89
Pollin. (Avg.)	20.31	20.94	20.19	22.82	21.97	23.75	23.10	24.00	24.13	22.90	23.50

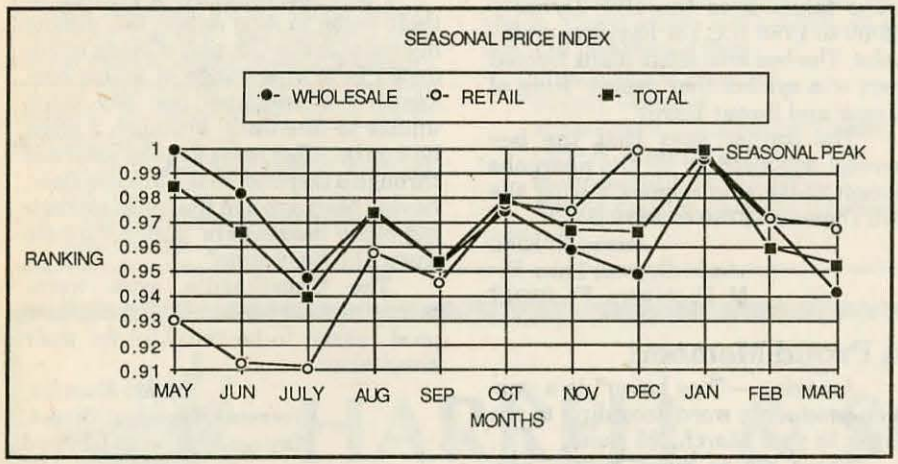
across all regions was $1.27, considerably lower than the $1.32 yearly average price. Honey bears generally rise in price throughout the year, peaking in January and February at $1.39 each, considerably above the yearly average of $1.32. Study chart 2 to see how your prices correspond over the year.

As far as ranking each month by total prices is concerned, chart 4 shows these in the price index format. Again, we've broken down the prices by wholesale, retail and total. The rankings, though not as clean as the National Honey Board report, bears notice as being similar. The differences are probably due to the different markets surveyed. The new honey crop each year has a tendency to command a higher price at the retail level in small markets — a situation not encountered by large grocery chains.

Graph No. 2 illustrates the relationship between the wholesale, retail and total price index over the eleven months of the study.

Price Index For:	M	J	J	A	S	O	N	D	J	F	M
Wholesale	1.00	.982	.948	.975	.953	.975	.959	.949	.996	.971	.942
Retail	.931	.913	.911	.958	.946	.978	.975	1.00	.998	.972	.968
Total	.985	.966	.940	.974	.954	.980	.967	.966	1.00	.960	.953

Chart 4.
Price Index totals for all months across all regions.

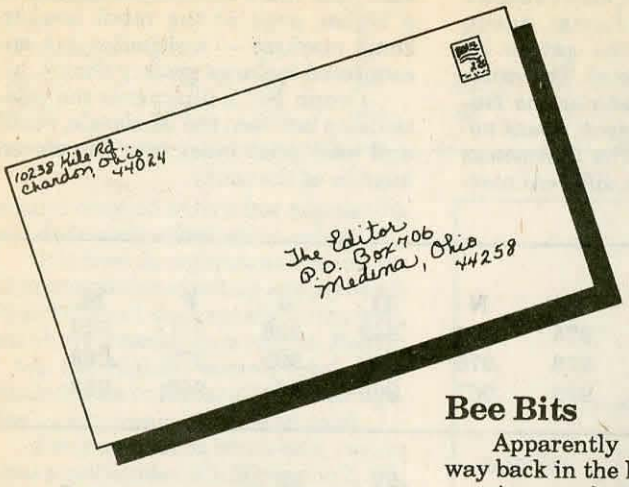


Graph 2.
Graphical representation of Chart 4.

Discussion

Marketing honey in small quantities, whether at a local retail outlet or your house is prone to forces that large grocery stores do not experience. They have high volume traffic, and aren't as concerned with attracting customers specifically for honey. Further, they are more concerned with the profit margin their items earn. They must buy low and sell high to cover their high overhead.

Small retailers, and you, do not have as large an overhead to cover, so can modify prices to meet a reduced or increased demand. This fact, higher profit during peak demand times, and reduced profit during slack seasons presents the problem of erratic cash flow. But, from a larger perspective, your total yearly income will benefit if you take advantage of this information.Δ



MAILBOX

Save Money and Make Honey!

Twenty-five years ago, Lady Bird Johnson, wife of former President Lyndon B. Johnson, made highway beautification a major contribution of her office. Today, Texas saves 8 million dollars a year in maintenance (mostly mowing) costs by switching to a mixture of native plants, including wildflowers.

In Colorado, thanks to the generosity of the Martin Marietta Corp., the Denver Botanic Gardens has received a grant to pursue a similar program here. The Botanic Gardens will focus on returning highway vegetation to it's natural conditions, which will mean more wildflowers for honey producers.

If your state currently plants and mows grass on it's right of ways, in the interest of beauty as well as better bee pastures, perhaps local bee associations should contact their highway departments or other governmental agencies to get similar movements going in your state. In a climate of tightening budgets, local and state governments may prove to be very receptive to this workable concept as a means of saving on highway maintenance.

Paul Hendricks
4001 S. Elati, Englewood, CO 80110

Bee Bits

Apparently the bee goes a long way back in the history of mankind.

A recent book, "Egyptian Mythology" by Veronica Ions, has a picture of a bee and a sedge plant carved on a stone tablet from the 12th Dynasty (2000 to 1786 B.C.) of Egyptian pharaohs. The bee and sedge plant formed part of a symbol that meant "King of Upper and Lower Egypt".

The author says that the bee symbol was used by all the pharaohs except those who reigned during the 3rd Dynasty (2780 to 2680 B.C.)

James R. Kidd
15496 Crystal Lake Dr.
N. Ft. Myers, FL 33917

A Proud Member!

Amazing —"bee haver" is a passion-producing word according to the letter in your March, '88 issue.

There are so many superb passion-producing words that can be used instead of criticizing the exceptional efforts of JoAnne Weber. She is a tireless worker for honey, honey bees and other hive products. I do not have to heap plaudits on JoAnne Weber, her results speak for themselves in the honey queen program, the institutional promotions and the consistent generic promotion of honey.

I am proud to be a member of the American Beekeeping Federation and have been sending my dues for over 25 years.

Mr. Johnson is complimented on his efforts on beehalf of bees and honey. I invite him to go a few more steps and write to JoAnne and request the 1988 American Honey Queen to come to his city for bee promotions. Then he will learn the magnitude of JoAnne's, and the American Beekeeping Federation's, efforts in honey promotion. Besides, he will meet some great beekeepers.

Albert G. Bell, Secretary
Eastern Montana Beekeepers
Association, Inc.

A Tribute

Might I pay a tribute to the late Jack E. Engelhardt, whose obituary you published in November *Bee Culture*.

Jack and his wife, Evelyn, were enthusiastic members of the International Bee Research Association who did much to make the Association known among beekeepers in the eastern USA.

I had the pleasure of staying at their home in Ann Arbor, MI, during my visits to the US, and of being introduced to a wide range of fellow beekeepers. I remember one day being unable to find Jack, although I knew he was in. After some time he emerged through a trapdoor in the kitchen floor, having been down in the cellar extracting other beekeepers' honey "to help them at a busy time".

The Engelhardts were warm hosts; beekeepers from overseas have good reason to be thankful for their hospitality.

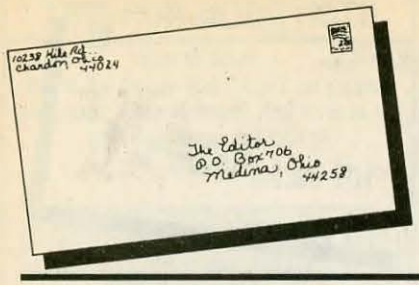
Karl Showler,
Riverside, Newport Street,
Hay-on-Wye, via Hereford
HR3 5BG, UK

Honey Bee Commodity Board

The American Farm Bureau Honey Bee Commodity Board will be possible if you and some of your beekeeping friends will contact the American Farm Bureau Commodity Division, Chicago, Il, phone (312) 399-5740. You may contact Harold Hartley or Ken Nye.

What can they do for us? Well, maybe we can help them on some of their policies. As beekeepers, we are facing some tough times with the Acarine and Varroa mites, and soon we will be facing the Africanized bee. We all need to work together and we could sure use the American Farm Bureau's help so that local governments don't make laws and ordinances banning honey bees from communities.

If enough interest is shown by the beekeeping industry in the American Farm Bureau, their Honey Bee Commodity Board will be established — but we need your support. If they see the beekeeping industry is interested,



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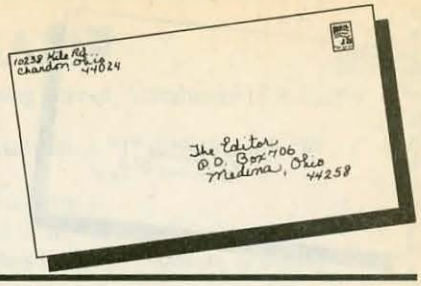


they will hold a conference, probably in Chicago and I hope many of you will participate. This Commodity Board will only happen with your help — by calling American Farm Bureau at the phone number listed above.

Edward Doan
Hamlin, New York

4-H: "H" is for Help

In response to a March letter, "Help for 4-H'ers", the question was raised as to whether there is a booklet on 4-H beekeeping? Ohio has two 4-H booklets on beekeeping, $1.00 each, and they are:

- 4-H Basic Beekeeping Manual No. 641.
- 4-H Advanced Beekeeping Manual No. 642.

They can be purchased by writing to:

Publications Office
Cooperative Extension Service
2120 Fyffe Road
Columbus, Ohio 43210-1010
Phone: 1 (614) 292-1607

A Boy Scout leader gave me the best booklet I've seen on beekeeping entitled: "Beekeeping Boy Scout Of America Merit Badge Series" 1983 Revision, Copyrighted 1957. I believe it can still be ordered from:

Boy Scouts of America
Supply Division
Midwestern Distribution Center
1930 N. Mannhein Road
Melrose Park, IL 60160

Ask for booklet No. 3362. The cost is $1.25.

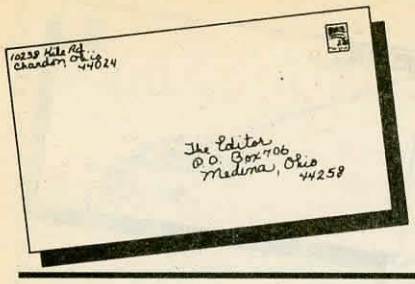
Robert J. Mohat
4461 Kugler Mill Road
Cincinnati, OH 45236

•

I would like to thank you for publishing my letter in your March issue requesting information for a 4-H beekeeping project. Thanks also to the many readers who responded with the following information:

The Ohio Cooperative Extension Service has published 4-H circular 641, "4-H Basic Beekeeping Manual" and 4-H circular 642, "4-H Advanced Beekeeping Manual".

I was also advised that Michigan State University has a bulletin, "Basic 4-H Beekeeping".



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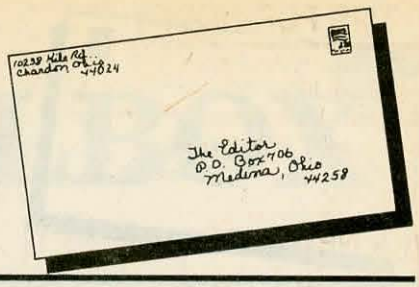


Let's promote the use of this information to educate the 4-H'ers and the public on the benefits we all receive from the honey bee.

Walter H. Dahlgren
R.D. 3 Creek Road
Jamestown, NY 14701

Chalkbrood Control?

During the past 15 years, I've seen chalkbrood as the single biggest problem in building populations of bees. My first big problems came after purchasing pollen from Canada. I recently found out, from the Tucson bee lab, that in the studies they conducted with ground imported pollen, up to 30% by weight was chalkbrood.

First step is not to feed contaminated pollen. Another problem is with chalk spores. They are found everywhere, in nearly all combs, boxes, and adult bees. When stress occurs, such as weakened from winter, making divides, poor queen, or poor food supplies, chalk can occur.

Chalk is a problem in my 3-frame mating nucs. It occurs when the new queen lays out 3 full frames of brood in 2-3 days time. What results is an imbalance of nurse bees to brood to feed, thus the larvae are acting like vacuum cleaners trying to suck the little food given to them. As a result of this process, the larvae consume an over-dose of chalk spores. In a full strength colony, an abundant supply of food is available resulting in reduced spore consumption. Another consideration is the pollen's mineral content. Proper mineral content and adequate supply to the larvae increases the immunity to chalk.

By reading various articles on chalk, nutrition, biology of larvae and asking for information from scores of beekeepers, an answer came up. Mineral Salt.

Last year, when I made up my mating nucs, we sprinkled a small hand full of Min-salt on the top bars. I saw a little chalk, making me wonder if it worked. But by the time we were caging the 3rd round of queens we had a very difficult time finding them amongst the large population of bees. This year we had the strongest nucs at the end of the season ever in 15 years. In the past, chalk mummies in the mating nucs were 50-90%. This year, less than 5%.

Another feature is to add the recommended dosage of Terramycin for AFB prevention. This was one of the clues I found to the chalk problem. Beekeepers who use this brew have very little chalk and have told me chalk disappears when using the above AFB preventative.

Mineral salt is reasonable too, $7.00-$14.00 per 100 lbs. Adding the proper amount of Terramycin the cost is about half of tetra bee mix.

This is not a scientific test and only one year that I used the mineral salt. So time will tell.

I wish to thank the following persons for information. Dr. Martha Gilliam, Dr. E. W. Herbert, Dr. Shimanuki, Randall Johnson, Jim Powers, Bob Brandi, and staff at Monsanto Agro-division, St. Lewis, MO.

David Miksa

A HONEY BEE GAME

Carsten Ahrens, 3461 Harrisburg Street, Pittsburgh, PA 15204

Please answer the following statements with a "T" (True) or an "F" (False).

1. ___ Honey bees are domesticated animals.
2. ___ Their queen's chief function is to lay hundreds of eggs.
3. ___ The greatest importance of bees is the production of honey.
4. ___ Nectar is not a synonym of honey.
5. ___ Each bee has five eyes, two large and three small ones (ocelli).
6. ___ A worker does a "dance" back at the hive after she finds a rich source of nectar.
7. ___ The Bible advises, "Go to the bee thou sluggard, consider her ways and be wise".
8. ___ Bee balm is a medication that is helpful in the control of foulbrood.
9. ___ A drone has a mother but no father.
10. ___ Although there is a queen, the instincts of the workers rule the hive.
11. ___ Bees are clean and tidy; their hive is a model of neatness.
12. ___ Bees store their honey in octagonal (8-sided) cells.
13. ___ The queen leads the attack when predators besiege the hive.
14. ___ The kingbird, a flycatcher, is often called a "bee bird" and is accused of eating bees.
15. ___ Royal jelly is made by bees from the fruit of elderberries.
16. ___ Columbus enjoyed honey from a bee tree during his first visit to the new world.

Answers on Page 284

PRODUCING THE PERFECT PACKAGE

Introduction

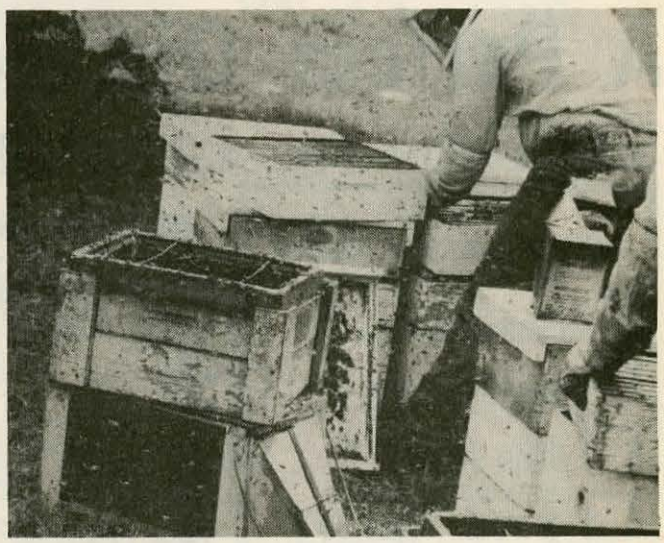
Howard Weaver and Sons Apiaries produces thousands of packages each year that are sent all over the U.S., and even abroad. With this kind of demand, producing a consistent quality product requires skill, care and and dedication. This month, in the final part of our look at this operation, we'll take a look at how they produce the perfect package.

Preparation

In December each year, colonies to be used to produce packages are moved from their honey producing locations to the area where packages are made. The colonies, which winter in two deeps, are reversed, and honey and brood are added to those that need a boost. From December to March, the brood chambers are reversed as needed to keep the colonies strong. In March, some of the colonies are used to stock the baby nucs needed in the queen production part of the business.

Package production starts in full swing about the first part of April, and runs full speed until mid-May. When the season begins, the colonies used for package production are checked once again. Those that meet Morris' standards are used for bees.

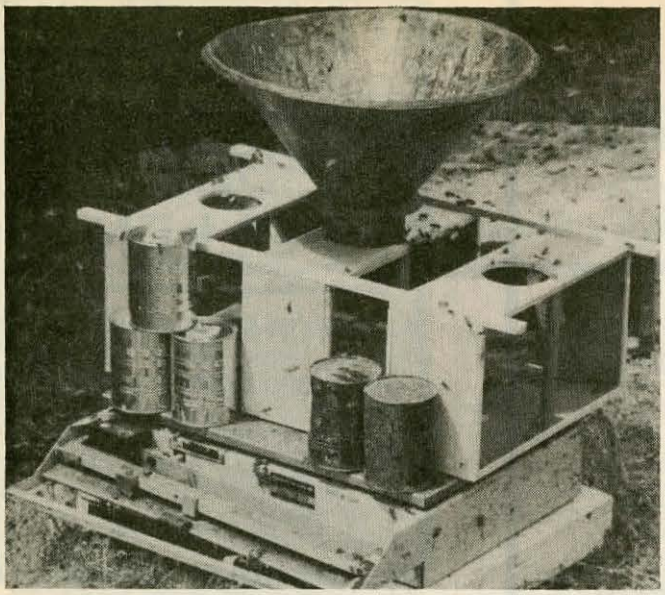
Bees are shaken from these colonies into what he calls his 'shaker box'. This box is then used to fill individual packages. The packages are filled during the day, so that there are mostly young bees going into each package, as the older bees are foraging during the day. Also, there are very few drones put into each package, as the bees are shaken though an excluder into a package.



Shaking bees from package colonies into the 'shaker box'. Excluder sits on top of box during this process.

Bees are literally 'funnelled' into each package from these shaker boxes, right on a portable scale.

"We always give more than the normal weight" says Morris, "since there are always a few that die before the customer gets them, and to make up for those 'non-productive' bees that always seem to find their way into any colony".



The package loading assembly. Packages are filled right in the field, using the funnel to pour them in from the shaker boxes. Feed and queens (if ordered) are immediately added, as this keeps the bees calmer, and healthier.

Filling packages. Each is carefully weighed, the queen and feed added and put on the truck for rapid delivery.

Again, employee skill and dedication are instrumental in producing a perfect package, and Morris says that over the years his staff have developed the skills necessary to make a good product. Also, since he produces a range of hybrids, his staff must not only know the skills necessary to produce a good package, but also to raise the kind of bees necessary to keep customers satisfied.Δ

Testing Your Beekeeping Knowledge

CLARENCE H. COLLISON
Pennsylvania State University • University Park, PA 16802

Honey bees are social insects and exhibit the highest degree of social behavior. A prerequisite of all social communities is the ability to communicate with each other. Chemical, optical, and mechanical means of communication are employed in the honey bee colony. Through their precise and highly differentiated dance languages and their numerous pheromones, individuals are able to recognize that they belong to the same colony, know what position they occupy in the social hierarchy, determine the basic needs of the colony and convey the location of a food source or potential nest site.

Please take a few minutes and answer the following questions to find out how well you understand communication within the honey bee colony. The first nine 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. ___ When there is a complete cloud cover, honey bees are unable to correctly indicate the direction of a food source when performing the wag-tail dance.
2. ___ Foragers perform similar dances when they discover new sources of nectar, propolis, pollen, water and the location of potential nesting sites.
3. ___ Drone honey bees perform communicative dances when they return from their flights to indicate the location of drone congregation areas.
4. ___ The intensity of dancing in the hive is related to the quality and quantity of the food source.
5. ___ Different races of honey bees vary slightly in their indications of direction and distance when performing the wag-tail dance.
6. ___ When a forager performs the wag-tail dance on a horizontal surface, the forager points directly toward the food source.
7. ___ The bees' estimate of distance as indicated by the dance is based on the expenditure of time required to reach the goal.
8. ___ Laying workers are able to produce queen substance (9-oxodecenoic acid).
9. ___ Laying queens are more attractive than virgin queens since they have larger amounts of queen substance in their mandibular glands.

Listed below are several different types of communicative dances that have been observed in the honey bee colony. Please match the type of dance being performed with the information that is conveyed by the dance.

A. Wag-tail dance
B. Buzzing run
C. Shaking dance
D. Round dance
E. Sickle dance
F. Jerking Dance (D-VAV)

10. ___ To signal nearby hive bees to clean certain parts of their body that cannot be reached by their own grooming abilities.
11. ___ Used to stir up bees when a colony is ready to issue a swarm.
12. ___ A gradual transition between a round and tail-wagging dance.
13. ___ Scout bees use this dance to induce a swarm cluster to take flight to the new nesting site.
14. ___ Purpose of the dance is unknown.

Listed below are three glands associated with the queen honey bee that produce pheromones. Please match the three glands to their correct body location and function.

A. Tergite Glands
B. Koschevnikov Gland
C. Tarsal Glands

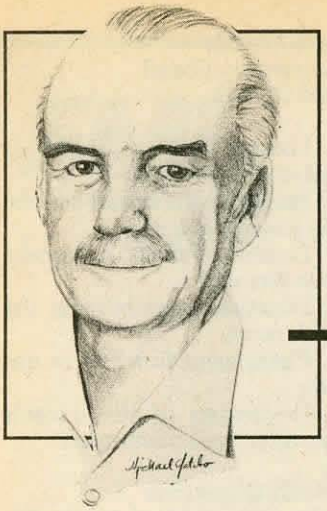
15. ___ Located within the sting chamber of the queen
16. ___ Found on the dorsal surface of the queen's abdomen
17. ___ Located on the fifth segment of each foot pad
18. ___ Function of stabilizing the queen's court
19. ___ Pheromone function is unknown
20. ___ Production of the queen's footprint or trail pheromone

Extra Credit Questions

During the tail-wagging dance, the dancer is followed by other bees with extended antennae, making contact with her and acquiring information. Dances are often interrupted one or more times; during the pause the dancer distributes to the followers food samples from the contents of her honey stomach. The tempo of the dance indicates the distance to the goal. As the distance increases, the tempo of the dance slows down. Both internal hive conditions and external factors may influence the dance tempo. (True or False, each is worth 1 point.)

21. ___ Bees following the dancer cause the dancer to stop and distribute food samples by mounting her with their front legs.
22. ___ As the external environmental temperature increases, the dance tempo decreases slightly.
23. ___ A headwind on the way to a feeding site will cause the dancer to over-estimate the distance to the food source.
24. ___ Bees that are exposed to a crosswind on the way to a feeding site will adjust the solar angle when they dance, so that the information conveyed will point straight toward the goal.

Answers on Page 296.



THE BEE SPECIALIST

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

"Standards for Queen Rearing"

A common complaint of honey producers is the "uneven" quality of the queens they buy: some are very good, while others in the same shipment leave much to be desired. The reasons for such variation in the quality of queens are numerous and include lack of controlled mating, less-than-ideal rearing conditions, methods of handling the queens, and the practice of obtaining queens from other breeders to fill out an order.

Perhaps the queen-rearing industry needs some better organization and standards for its production methods and the end product, their queens. The New Zealand queen breeders have been comparing the quality of queens produced there by different beekeepers in hopes of pinpointing the methods that consistently produce large, productive queens. In West Germany, bee breeding is a part of the German Beekeepers' Federation. They use guide lines that were established jointly by breeders and apicultural scientists. The queen breeders are organized by regions or districts, and must participate in training courses that include breeding, selection, and bee diseases before they are approved for official listing. Islands and isolated mountain areas are used for mating stations to achieve as pure matings as possible.

Norway has worked hard to improve queen rearing and queen quality in that country. The Norwegian Beekeepers' Association cooperates with the Agricultural University of Norway to rear selected queens on a peninsula in Oslofjord. In the 70's, they imported Carniolan queens from Austria with the assistance of Hans Ruttner in selecting good strains. They established districts where only Carniolans may be kept in order to get away from the bad temper of the crosses produced by the old European black bees. They also hoped to reduce the chalkboard epidemic that seriously affected the original black bees.

It is interesting to note that the Norwegians have eliminated Caucasian bees in favor of the Carniolan, Italian, and Buckfast strains. They also have the original black bees, which are well adapted to the climate of the country. The Norwegians are critical of the variable quality of queens they receive from the United States and blame it on the lack of "mating control."

Egil Villumstad thinks beekeepers should have more in mind than just honey production when selecting a race or strain of bees. He is concerned about honey yield per man-hour rather than yield per hive. The labor requirement per colony is determined partly by the swarming propensity and temper of the bees. Swarm-prone and ill-tempered bees require more labor for successful production than do gentle colonies less inclined to swarm.

An important part of the bee breeding program in Norway is a simple "strain evaluation system." Testing is done in private apiaries but also in three testing stations in different regions of the country. They follow a testing system worked out by an Apimondia symposium held in Austria in 1972.

We hear a lot of talk these days about how queens will have to be "certified" in relation to our future control efforts for Africanized bees. This is an ideal time for queen breeders, beekeepers, and bee researchers to get together to consider ways to improve the quality of queens reared in the United States and to discuss whether there is any practical and affordable method of selecting and maintaining gentle stock as the first wave of Africans comes into the country. Such a meeting could also take up the subject of importing gentle Africanized strains and how they can be distributed widely to gain the most benefit. The American Bee Research Conference, October 12 and 13, at Westlaco, Texas, would be an ideal site for such discussions.

Skunks Never Give Up

Skunks are like coyotes — they are increasing in numbers because they adapt so well to living around humans. They are also less subject to trapping than in the past. And once a skunk or a group of skunks gets "hooked" on eating your bees, it will not quit until you take some action to correct the situation.

The easiest but rather dangerous way to kill skunks was to poison them with strychnine in an egg or on some drone brood tucked under the hive. Nowadays, if you try to buy the poison, the pharmacist will look you over to see what kind of criminal act you have in mind. You no longer can purchase strychnine for killing skunks and its use is not approved.

The options all have disadvantages also. Skunks are easy to catch in leg-hold traps, but you are risking, almost insuring, that the animal will release its liquid scent. Any animal caught in that manner must be shot or drowned, further exposing you and the area to being sprayed.

Live traps are more humane and less risky. A trap about 10x10x30

inches, or slightly larger, is the best size. Bait it with fish, fish-flavored cat food, or chicken parts. If you cover the trap with burlap at the time it is set, you should be able to move it safely after you get a skunk. Kill the animal by submerging the trap in water or enclosing the trap in a box into which automobile exhaust can be piped. Most experts do not recommend releasing the animal in another area because of the risk of spreading rabies.

An alternative to trapping is to make the hives inaccessible to the skunk. Put them on supports 2-1/2 to 3 feet above the ground. Or, you can fence the hive or apiary with small-mesh (1-inch) chicken wire three feet high. To prevent the animal from digging under the fence, extend the wire six inches beneath the ground and then six inches outward.

Before trapping or killing any skunks, check with the agency responsible for preservation of wildlife in yourz state, usually the Fish and Game Department. Skunks are protected furbearers in many states and permission is required to control them for health purposes or because of damage done by the animals.

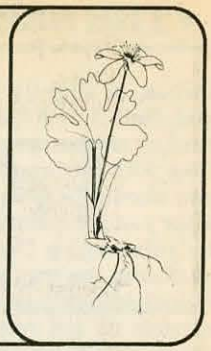
A product called neutroleum-alpha is very effective in neutralizing their odor. It can be used on dogs, people, and even contaminated soil. Unfortunately, it is difficult to obtain but may be available from hospital supply houses.

Reducing Vandalism

In the newsletter *An Hes* from West Cornwall, England, editor Andrew Reeve showed some notices that might help to keep vandals out of an apiary. One says, "Killer Bees bred here. Keep Out." The other warns, "DANGER, guard hornets on patrol." Reeve's illustration of a protected apiary shows the signs posted on the gate between two rolls of concertina wire, widely used to keep people in or out.

When I was having trouble with someone messing up my bee waterers, I labelled the tank, "DANGER — Experiment. RADIOACTIVE." There were no problems after that. Δ

APPALACHIAN HONEY PLANTS



Blood Root, U.S.D.A.

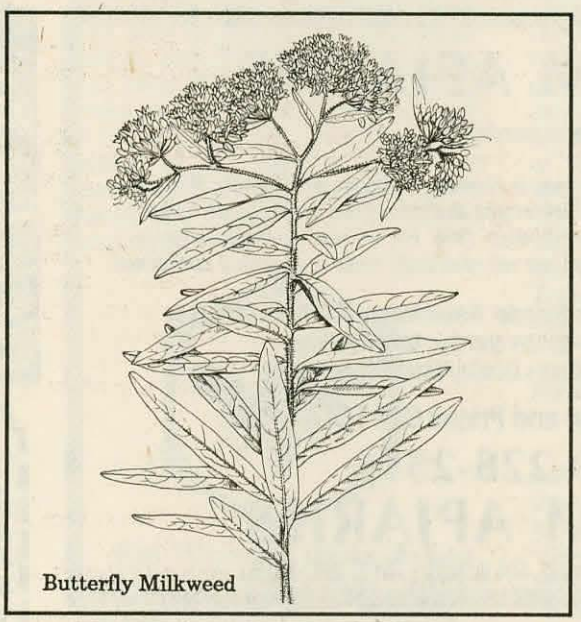
CONNIE and ARNOLD KROCHMAL

During the period 1966-1982, we had the opportunity of surveying the flora of the Appalachian highlands in western North Carolina, Tennessee, Kentucky, Virginia and northern Georgia while doing botanical studies for the U.S. Forest Service, and a summer in the Great Smoky Mountains National Park with the National Park Service.

A number of these studies have been published in the Forest Service research series. However, a large number remain unpublished, but are available from the authors.

It has been said frequently that the Appalachian region has a diversity of plants unmatched in the United States, and our studies confirm this. Whether this diversity will remain such is an interesting point. Elimination of some of the flora is underway, an example is the newly funded Arboretum to be built in North Carolina's mountains on 140 acres of what was National Forest.

This list is by no means complete, but represents what we have observed during our years of field studies in the region, and our own beekeeping project in western North Carolina. These are some of the plants which we feel are important to beekeeping in the region.



Butterfly Milkweed

New Jersey Tea

Persimmon, U.S.D.A.

PLANT		COMMENTS
Trees		
Basswood	*Tilia spp.*	June. Light amber to dark, strong minty flavor, full bodied, granulates. Some reports of toxicity. Source of honey-dew.
Buckeye	*Aesculus glabra*	May flow (P)
Dogwood	*Cornus canadense*	March-April flow.
Horse chestnut	*Aesculus hippocastanum*	April-May. Honey thin bodied, light. Pollen suspected of toxicity to bees.
Locust, black	*Robinia pseudo-acadia*	Aprl-May. Very light, almost white, thick bodied (P).
Locust, honey	*Gleditsia triacanthos*	June. Not as good a source of surplus as black locust.
Magnolia	*Magnolia spp.*	Strong flavor, dark amber.
Maple	*Acer spp.*	Very early source (N and P)
Mountain Ash	*Sorbus americana*	(P)
Persimmon	*Diospyros virginiana*	June flow (P)
Redbud	*Cercis canadensis*	Very early, March-April, little surplus. (N and P)
Sassafras	*Sassafras albidum*	Very early, March-April
Sourwood	*Oxydendron arboreum*	Famous for almost pure white color, delicate flavor. April-May.
Sweet gum	*Liquidambar styraciflua*	April-May
Tulip tree	*Liriodendron tulipiferum*	Pale to reddish amber, heavy bodied. June-July and earlier. (P)
Wild cherry	*Prunus avium*	April (P)
Willow	*Salix spp.*	Very early spring to early summer, March-May (P)
Witch hazel	*Hamamelis virginiana*	Late bloom, October on. (P)
Herbaceous		
Aster	*Aster spp.*	Yellow pale amber. Fall flow. (P)
Boneset	*Eupatorium*	Dark amber, strong aroma, heavy bodied. (P)
New Jersey Tea	*Ceanothus americanum*	Early spring - July (P)
Dandelion	*Taraxacum officinale*	Spring to fall. Dark yellow to amber, strong, granulates.
Goldenrod	*Solidaqo spp.*	Thick, strong flavor, dark amber. Fall flow.
Knotweed	*Polygonum spp.*	June-frost. Strong flavor and aroma, dark amber.
Milkweed	*Asclepias syriaca*	Pale yellow, heavy body. July-fall.
	A. incarnata swamp milkweed	Early summer
	A. tuberosa butterfly weed	June-July
Sneezeweed	*Helenium autumnale*	Fall flow. Strong flavor (P)
Thistle	*Carduus spp.* also known as *Cirsium*	June on. (P)
Shrubs and Vines		
Blackberry	*Rubus alleqheniensis*	May to fall. Heavy body. Important fall storage source (P)
Blueberry	*Vaccinium corymbosum*	Amber. April-May
Coralberry	*Symphoricarpus vulgaris*	Light amber to almost white. July-Sept.
Hackberry	*Celtis spp.*	Very early (P)
Holly	*Ilex opaca*	Heavy body, pale amber, strong flavor, granulates slowly. Short flowering period, May-June.
Huckleberry	*Gaylussacia spp.*	Very early spring, April-May. Very pale amber, mild flavor.
Mountain Laurel	*Kalmia latifolia*	June-July. Reputed source of toxic honey, no verification.
Poison ivy	*Rhus toxicodendron*	June. Reputed source of toxic honey, no verification (P)
Sumac	*Rhus typhina* staghorn	June (P)
	R. glabra	June (P)
	R. copallina	July (P)
Virginia Creeper	*Parthenocissus quinquefolia*	May-August, amber

POLLEN SOURCES

Alder	*Alnus*	Mullein	*Verbascum*
Beech	*Faqus*	Oak	*Quercus*
Bloodroot	*Sanquinaria*	Plantain	*Plantago*
Chinquapin	*Castanea*	Ragweed	*Ambrosia*
Elderberry	*Sambucus*	Rush	*Juncus*
Elm	*Ulmus*	Skunk cabbage	*Symplocarpus*
Hazelnut	*Corylus*	Walnut	*Juglans*
Hickory	*Carya*		

**All photos courtesy of USDA*

(P) Pollen (N) Nectar

RESEARCH REVIEW

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

"More support for replacing old combs"

Nosema Control

The recently introduced honey bee diseases, chalkbrood in 1972, tracheal mites in 1984, and Varroa in 1987, have caused us to forget some of the traditional concerns such as nosema. Nosema is one of those microorganisms that is found everywhere in beedom; it invades the cells lining the adult honey bee's gut and will shorten the life of old bees. Generally, we think of nosema as a more serious problem in the North than in the South; in the North we have kept nosema under control by selecting good apiary sites, those that are well drained and dry and have an abundance of sunlight. In other words, in the past, good management has been sufficient to control nosema. It is increasingly clear that in the future, because the new diseases put additional stress on colonies, we will be forced to pay closer attention to nosema control as part of a strong management program.

A recently completed thesis from Sweden[1], which is being published in four papers, supports a long-held belief that replacing old combs with new ones in the summer will decrease the incidence of nosema the following spring. The logic is that when bees are cleaning old combs for brood rearing, especially in the Spring, they pick up a large number of nosema spores in the process. Wintering on new comb "reduces the influence of nosema disease." An added value of the thesis cited below is that it contains an excellent updated review of the nosema literature.

Renewing comb each year does not fit into our management schemes in North America. However, this research suggests to me that thinking about comb sterilization and/or the use of antibiotics for nosema control will be more important in the future.

Controlling Purple Loosestrife

Beekeepers in the northeastern states have come to recognize purple loosestrife as an important honey plant. The honey is amber and when held up to the sunlight has a slightly greenish tinge. The flavor is mild despite its somewhat darker color and it makes a reasonably good table honey.

Purple loosestrife is a wetlands plant and abounds in many swamps. Its origin is either Europe or Asia, no one is sure which. Seeds of the plant were brought to North America, probably accidentally, though perhaps as an ornamental, with the first settlers or soon thereafter. By the early 1800's it was firmly established along the New England coast. In this century it has spread west and by 1985 was found coast to coast. It is found as far south as South Carolina though it is rare there. To the north its range extends into southern Quebec and the southern parts of Canada's prairie provinces.

Loosestrife is what is called a monotypic plant because it is found in solid stands. It outcompetes everything around it. For the beekeeper the large fields of the reddish-purple flower are a delight to the eye when they flower in late June through early September.

An ecological problem is that purple loosestrife is replacing cattails in swamps everywhere it is found and a number of species of wildlife are apparently being displaced when the cattails are gone. More important, the plant is continuing to spread, especially in the wetlands and irrigation systems of the Far West. The states of California, Illinois, Ohio, Minnesota and Wisconsin "have taken prompt action to deal with this weed", according to the paper listed below[2]. I heard voices of discontent over the spread of purple loosestrife from people in what was then called the New York State

Department of Conservation as much as 30 years ago. Between 1955 and 1958 attempts were made in New York to control loosestrife using weed killers but without much success.

Purple loosestrife has been grown as an herb though it appears to be little used in this connection today. It is used as a decorative garden plant both in Europe and North America and has been sold as such by some nurseries in this country.

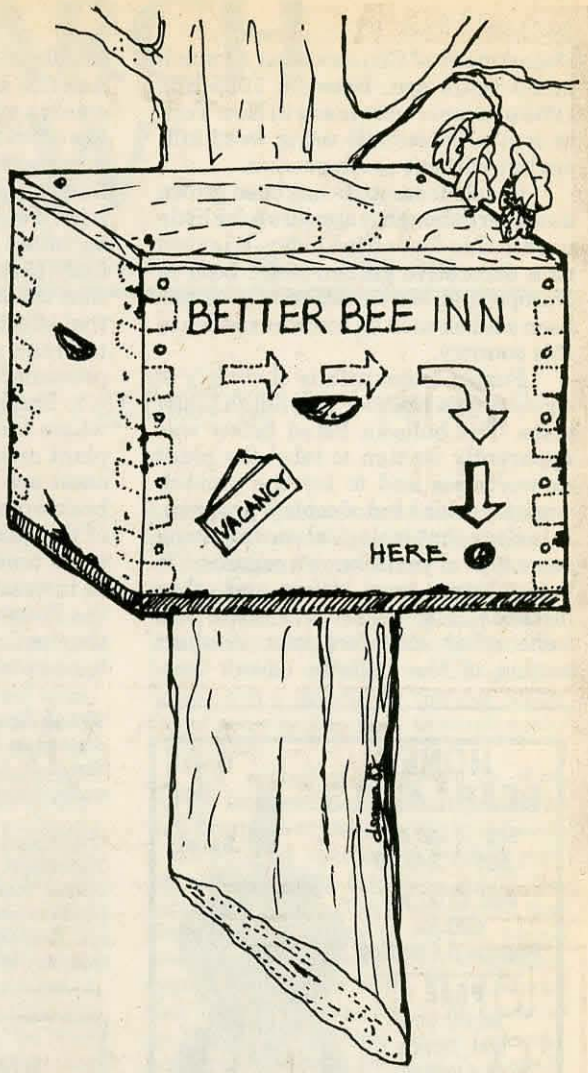
Purple loosestrife is obviously of concern to a number of wildlife biologists. The bulletin listed below was apparently written to label the plant as worthless and to lay the groundwork for some kind of control program. It is clear that biological control using some type of yet unknown organism is favored over weed killers and other methods. For beekeepers there are some other considerations. A short section of the bulletin covers loosestrife as a honey plant in North America but contains antiquated references and was obviously not a serious effort to determine the role it plays in some beekeeping areas. Nor could I find in this report any effort to determine if any wildlife species might have benefited as a result of its introduction. It is pointed out in one section that cattails are also monotypic and that efforts have been made in the past to break up solid stands of it for the presumed *benefit* of wildlife.

There have been a few instances where biological control of a noxious plant or animal has worked but such cases are relatively few. I don't think beekeepers need worry about the loss of this plant as a source of nectar for some time, if ever. Meanwhile, it will be interesting to learn if beekeepers in the West and Midwest become as enthusiastic about purple loosestrife as a honey plant as are those in the East.Δ

[1]Frie,I. Contribution to the study of nosema disease in honey bee colonies. Report 166. Swedish University of Agricultural Sciences, Uppsala, Sweden. 1988.

[2]Thompson, D.Q., R.L. Stucky and E.B. Thompson. Spread, impact and control of purple loosestrife (Lythrum salicaria) in North American wetlands. Fish and Wildlife Research 2. U.S. Department of the Interior. Washington, D.C. 55 pages. 1987.

BAIT HIVE BASICS



MICHAEL FERRACANE
Office of Apiculture • Department of Entomology
Cornell University • Ithaca, NY

Bait hives are an easy and inexpensive way to obtain bees for starting new hives, bolstering weak colonies, or for establishing two-queen colonies. All that is required is an old hive body with an entrance hole drilled in it, several frames of drawn comb, and a good location to put the bait hive where scout bees from a swarming colony are likely to find it.

The chances of catching a swarm in a bait hive depend on a variety of factors, such as the number of honey bee colonies in the area, the availability of suitable nest cavities, the severity of the previous winter, the availability of nectar and pollen in the spring, and the location and quality of the bait hives. Under good conditions you can expect to have a reasonable proportion of your hives occupied.

Swarm Preferences

Thanks to the research of Dr. Thomas Seeley at Cornell, we have a fairly good understanding of what a swarm looks for in a new home and can take advantage of this knowledge in establishing our bait hives. The parameters of an "ideal" bait hive and its placement can be summarized as follows:

hive interior: dry and dark with a volume of about 40 liters (1.4 ft^3)

entrance: a hole 1 1/4" in diameter (or an opening with the equivalent area) located at the bottom of the hive

location: on the south side of a tree, well shaded but highly visible

height: 10' to 15' above the ground

To maximize your chances of catching swarms you should try to meet all of these conditions when setting up your hives. However, swarms often accept less than perfect homes. Therefore, don't be deterred from trying out some bait hives even if you can't match all the conditions exactly.

Traditional Bait Hives

Bait hives are commonly made from boxes, pots, or other containers. They are usually placed out empty, although sometimes a few pieces of comb are thrown in to attract the bees. While these are relatively cheap and easy to construct they have a serious drawback. The natural combs constructed by the bees in these hives are ultimately wasted because there is really no way to adapt such combs to modern moveable frame hives. When you are in a hurry to transfer the bees from such bait hives to standard equipment these combs must be cut out of the bait hive and the bees shaken from them. This is a messy and time consuming process in which the brood is usually destroyed. It is also stressful on the colony and certainly retards its development.

A less destructive method of transfer involves placing a super of combs above the bait hive and waiting for the bees to eventually move the brood nest into it. At this time the bait hive can be removed. While this method is less wasteful it is time consuming and requires special management of the colony. In the end the natural combs still go to waste

Transporting an occupied bait with natural combs can also present a problem. Because the combs are new and unsupported, they are fragile and susceptible to breakage, especially if the colony overheats during the move, which can occur due to the small size of the entrance.

A Better Bait Hive

By using bait hives made from old hive bodies and frames of drawn and partially drawn comb the problems stemming from natural combs are eliminated. The bees do not waste their resources constructing combs, but instead use the frames of comb provided and set up housekeeping

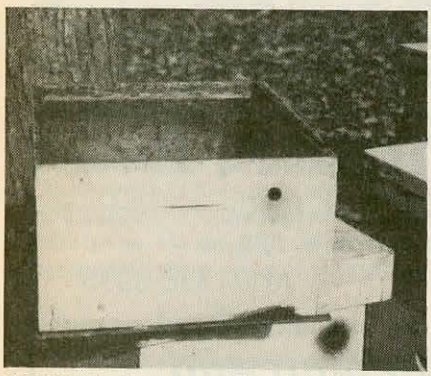
Continued on Paghe 272

BAIT HIVE . . . Cont. from Page 270

immediately. In addition, both the transport and transfer of the bees are easier and safer. Another advantage in using drawn combs is that they are highly attractive to swarms.

Although the main reason for using old hive bodies for bait hives is that they allow the use of standard frames, there are other advantages as well. Hive bodies have a volume of about 42 liters, almost exactly the volume preferred by honey bees in studies. And, since they have been previously occupied by bees, their walls are well coated with wax and propolis and give off an odor that is attractive to other bees. These substances have all been shown to increase the attractiveness of bait hives to swarms.

Anyone that has been keeping bees for any length of time generally has a few hive bodies that are are starting to decay, are wobbly, or for some other reason should be replaced. Beekeepers are a frugal lot, (as I can attest to personally), and hate to throw anything away. What better way to justify buying a few new hive bodies than to semi-retire the old ones as bait hives?



Old hive body converted into bait hive. This hive actually has two entrances but the bottom one is the important one.

For those with no old equipment or who are just starting out in beekeeping, old hive bodies can often be obtained quite inexpensively from other beekeepers or at auctions. When buying old equipment be on the lookout for possible contamination with AFB spores. Equipment scorched on the inside is usually a sure sign of previous AFB problems. Before buying, talk to the owner, if possible, to find out if he has had problems with AFB. You can scorch old hive bodies on the inside as an added precaution but since this destroys the wax and propolis coating it eliminates many of the advantages of using old equipment. As a precaution, monitor any swarms caught in equipment of unknown origin for AFB before transferring to your apiary.

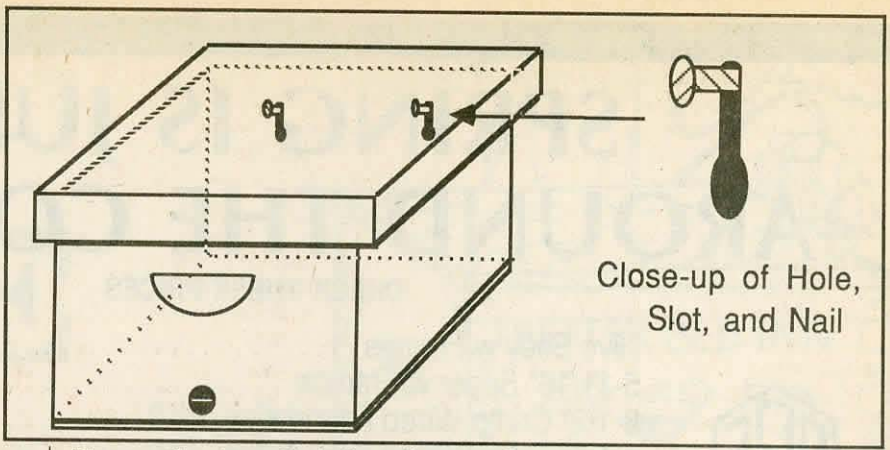


Diagram showing method of attachment with nails. Note nail across entrance hole to restrict opening.

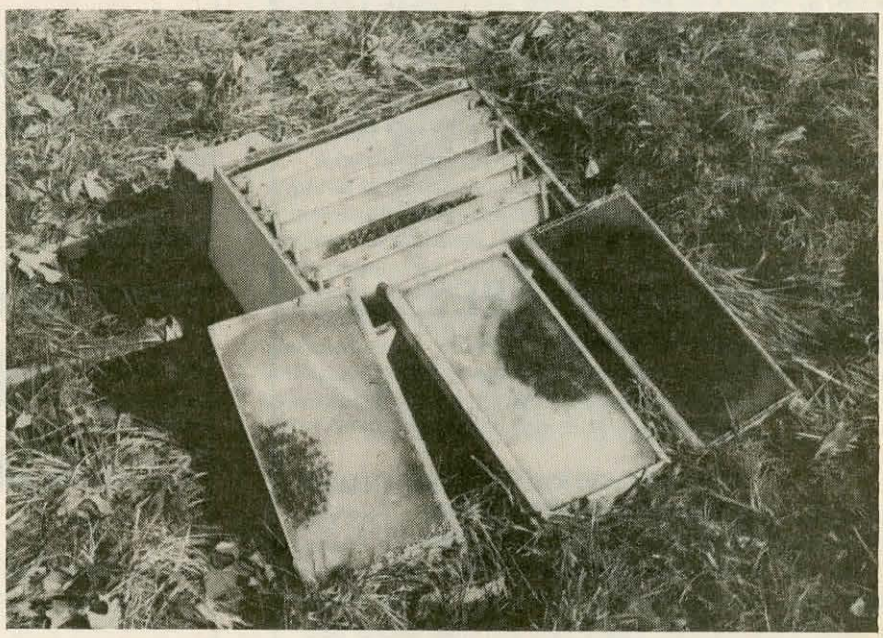
In the event that old hive bodies are unobtainable, or using them seems too risky, you can easily construct your own from scrap lumber following standard hive dimensions. These will hold frames but will not have the coating of wax and propolis that old hive bodies do unless you keep bees in them for a season.

To turn a hive body into a bait hive simply nail a piece of plywood on the bottom, drill a 1-1/4" entrance hole near the bottom of the front side, insert frames, and cover the top with a piece of plywood or a standard hive cover. To exclude birds and mice from entering the hive, wedge a nail into the entrance hole. It is worth painting bait hives a dark color so they blend in with their surroundings and are less noticeable to passersby. A dark colored bait hive may also make the hives more attractive to scout bees as well.

Combs

Although you can use combs drawn on any type of foundation, I recommend using combs drawn on wax-coated plastic foundation. Such combs are sturdier than those built on other types of foundation and are readily repaired by the bees if damaged.

I use 9 or 10 frames in my bait hives as this gives the colony plenty of room to expand, thereby giving me more time to retrieve the colony. Filling up the hive body may also make it less attractive to birds, rodents and other pests that are apt to move into an an empty cavity. You can use fewer frames in your bait hive, although probably no less than 5, providing you transfer the colony before the bees begin drawing combs in the empty areas. If you do use less than 9 frames, crowd them together in the center of the hive to prevent the bees from build-



The 2 combs on left are in wooden frames with plastic foundation; 1 on right is a 1 piece plastic frame and foundation.

ing brace comb between them.

While research has shown that old brood combs are the most attractive combs to swarms, they are also attractive to wax moths, ants, rodents, and other creatures. Although these pests are normally not too much of a problem in the early summer(at least in the North), if they do invade a bait hive they may utterly destroy the combs (especially those built on wax foundation). Once combs have been invaded by such pests they are much less attractive to honey bees. Therefore, I recommend using only two or three old brood combs unless the bait hive is close enough for regular inspection. To fill up the remainder of the hive, use combs that have not had brood reared in them, partially drawn combs, or frames containing foundation. I suggest arranging them with the brood combs in the center of the hive, followed by any frames of newly drawn comb, any partly drawn combs, or any frames with foundation used. This will center the bees in the bait hive and allow them to expand.

As anyone that has ever hived a swarm of bees knows, they can build new combs with remarkable speed. Combs drawn from foundation by swarms are usually of the highest quality. You may want to take advantage of this by including a few frames with foundation in your bait hive. I would suggest using wax-coated plastic foundation rather than wax foundation. Wax foundation warps and is relatively fragile, especially at high or low temperatures. It is also sometimes damaged by the bees when there is a dearth of nectar and replaced with drone comb. Wax-coated plastic foundation, on the other hand, is virtually impervious to damage, is unattractive to pests, does not warp, and in my experience is readily accepted by the bees.

Swarm Lures

Old-time bee lore has it that rubbing the inside of bait hives with certain leaves or grasses makes them more attractive to swarms. While these compounds may be somewhat attractive to swarms the synthetic pheromone lures available today are much more effective. These lures are primarily blends of the compounds present in the secretions of the Nassanov gland of honey bees and have been shown to be highly effective in attracting swarms. Although pheromone lures are not essential in attracting swarms to bait hives, they will increase the chances of a swarm taking up residence. A commercial manufacturer of bait hives, Scentry Inc., includes pheromone lures with their hives and also sells the lures separately. To purchase the lures, or for further information, contact either Ms. Judith C. Shaw: P.O. Box 426 Buckeye, Arizona 85326-0090 or Mr. James Hansel: Great Lakes IPM, 10220 Church Rd., NE, Vestaburg, Michigan 48891. The developer of the lure, Dr. Orley Taylor, offers a kit containing 10 rechargeable lures, applicators, and a generous supply of extra pheromone, for $10.00 plus $1.00 postage. A 4 dram vial of the pheromone alone may be purchased for $5.00 plus $1.00 postage. Checks should be made payable to the Bee Research Fund, Endowment Association, University of Kansas and sent to Dr. Orley R. Taylor, Department of Entomology, University of Kansas, Lawrence, Kansas 66045.

Bait Hive Placement

Bait hives can be used successfully anywhere honey bees are found. This includes everywhere from the woods to the center of most cities and towns. Look for locations that are sunny and sheltered from prevailing winds. The southern or eastern edges of forests are usually good places to set up a few bait hives.

While scout bees search over a large area for suitable nest cavities you can make things easier for them and increase your bait hives' chances of catching swarms by placing them near existing feral colonies of bees. Studies show that most feral colonies cast swarms every year. These bees often select cavities within several hundred yards of the parent colony. This means that it is also worth while putting up a few bait hives around your apiaries to catch any swarms that emerge from your own hives.

To maximize your chances of catching swarms, set out your bait hives a week or more before the main swarming season begins to allow scout bees sufficient time to locate them. While there is considerable variation in the start of the swarming season depending upon latitude, as well as regional and local conditions, it typically starts around the time of the fruit bloom in most localities. It has also been shown to coincide closely with the appearance of drones in colonies. In central New York the swarming season usually starts around May 15. About 80% of all of our swarming takes place between this date and July 15.

Although there is often a fall swarming season in many localities, swarms captured in bait hives at this time are seldom worth bothering with since it is difficult, if not impossible, for them to gather sufficient stores to survive the winter. Therefore, take down your hives soon after the main swarming season ends in midsummer to protect the combs from pests and to extend the life of the hive itself.

The major disadvantage in using hive bodies with frames as bait hives is that they represent a much greater financial investment than simple empty boxes constructed from scrap lumber. Be sure to protect your bait hives against possible vandalism or theft by selecting locations that are somewhat secluded although still accessible. Hang your bait hives at least 10 to 15 feet off the ground on trees or other structures that would be difficult for kids to climb.

When you select the spot on the tree to place your bait hive, keep in mind that you will eventually need to remove the hive (hopefully when it is full of bees). An occupied bait hive can be heavy, often weighing 60 lbs or more. (This past summer I retrieved a bait hive that weighed over 80 lbs).

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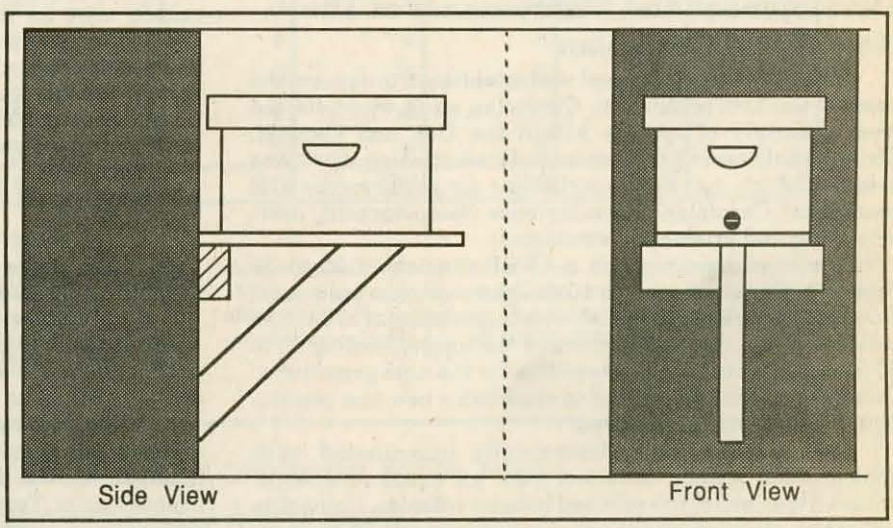


Diagram of platform with bait hive in place.

A Successful Application of the Page/Laidlaw Breeding Program

SUSAN COBEY and TIMOTHY LAWRENCE
Vaca Valley Apiaries • Instrumental Insemination Service • 6745 Bucktown Lane • Vacaville, CA 95688 • USA

The concept of working with a large population to improve honey bee stock is a new and innovative approach to bee breeding. Recently this approach has been applied by Drs. Page and Laidlaw who developed the Closed Population Breeding Program, (CPBP). This program is designed to establish a large population in which stock is progressively improved. It eliminates the frustration and problems of breeding systems used in the past. There are several advantages in working with the gene pool of an entire population. The problem of inbreeding, which has been the major limiting factor of inbred-hybrid breeding systems, is essentially eliminated. The CPBP is flexible in that you are not dependent on a few select queens. Selection is a continuous process and new traits can be added to your gene pool. This program finally gives the beekeeper a practical and feasible breeding program for commercial use. Vaca Valley Apiaries has been using this program for five years and we are impressed with the results, practicality and flexibility of the system.

We were fortunate to be at the University of California, Davis when Drs. Page and Laidlaw were developing their theoretical model of the CPBP and became excited about the possibilities of bee breeding using this system. Since then we have taken this program into the bee yard, given it practical application, and developed the New World Carniolan line. This was not an easy process and required some modifications. We are grateful to Dr. Rob Page and Dr. Harry Laidlaw for their encouragement, advice and patience in answering our questions to make the program workable.

Development and Maintenance of The New World Carniolan

Initially a large gene pool was established to develop the basis of our test population. Carniolan stock was collected from a variety of sources within the U.S. and Canada. Through field testing of colonies and backcrossing, stock was selected which met our expectations for performance and traditional Carniolan characteristics (temperament, overwintering and production strategies).

The base population in a CPBP consists of 35 to 50 breeders. Each spring, 5 to 10 daughter queens are reared from each breeder to establish a test population of 175 to 250 colonies. From this test population the top performing 35 to 50 colonies are selected as breeders for the next generation. Daughter queens are reared to establish a new test population and the cycle is repeated.

Test queens are instrumentally inseminated with homogenized semen, collected from an equal number of drones from each of the selected breeder colonies. Using this technique, the sperm within each queen's spermatheca is an equal genetic representation of the *entire* selected population. In this way we are able to select for maternal differentiation. This process is repeated annually providing a wholistic approach and a progressive increase in the gene frequency and consistency of desirable traits within the population.

Performance of Instrumentally Inseminated Queens

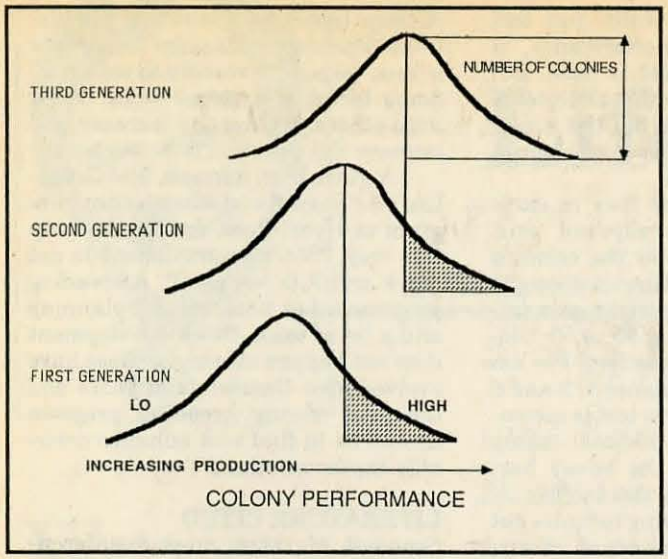
Instrumental insemination is used to control and maintain this program. Proficiency in the technique is essential and requires proper equipment and a clean laboratory. A large number of inseminations can be accomplished efficiently with the use of a large capacity syringe. Each queen is given a full semen load to assure a productive life. Keep in mind that these queens more than earn their keep by heading productive, income producing colonies as well as serve to improve the stock. Their colonies are used in pollination and honey production. This has not been possible with programs of the past.

Instrumentally inseminated, (I.I.), queens require a bit more care initially, though once established in full size colonies there appears to be little or no difference in performance compared to naturally mated queens. In the past I.I. queens acquired a reputation for supersedure. We have not found this to be a problem if queens are given proper pre- and post-insemination care. The secret appears to be establishing I.I. queens in small units and allowing them to build up their own populations. The first cycle of brood is the most critical time for these queens, which sometimes start egg production at a slower rate than naturally mated queens, and cannot meet the demands of a full size colony. For this reason, breeder queens are carefully watched and evaluated for at least 6 months before release. Given this care, we feel confident in guaranteeing their performance.

Selection

The selection of breeders is an annual process. Test queens are reared and instrumentally inseminated in late spring and early summer. These are allowed to build up into full size colonies and overwintered. Preselection data is taken in the fall and again the following spring. The honey production test and final evaluation are completed by the second spring and the cycle repeated.

Selection is based on colony performance. To properly evaluate the capability of potential breeders, queens must head full size colonies. They cannot be accurately evaluated in small units. Test queens are started in five frame nucleus colonies and allowed to build up and establish their own populations.



Selection of the top performing colonies of each generation will result in a progressive increase in consistency and the average production of the population over time.

The program is designed to enhance desirable, naturally occurring characteristics in the population. We are selecting for behavioral traits which are the result of an unknown combination of many genes. By selecting the top performing colonies of each generation we are including the combination of genes responsible for these. There are several factors and their interactions to consider in the selection process; the genetic makeup of the colony, environmental influences and beekeeper management practices. Our goal is selection based on genetic variability, therefore we want to minimize the environmental effects as much as possible. Uniform management is essential. Test colonies are treated equally. For example; if a colony is slow to build up, it is not equalized through management and will eventually be eliminated from the program for poor production.

In the process of selection we are interested in results rather than specifics. The intricate social structure of a colony is made up of many subfamilies possessing a variety of characteristics. The specific traits and/or combination of traits responsible for high productivity are our goal. Precise measurements of specific traits are costly, labor intensive, will force a reduction in number of colonies tested and limit the number of traits evaluated. By selection of the top performing colonies, we are selecting the combination of characteristics responsible for high productivity. Each selected generation shows a progressive improvement in colony performance. The distribution graph in Figure. 1 illustrates this; by choosing the top performing colonies of each generation the average production of the population is increased over time.

Selection Index

A selection index is used in our "**pre-selection**" process. This provides an objective means to evaluate colonies. A point value of 1 to 5 is given to rank the occurrence of each desired characteristic. The higher the number the greater the demonstration of the particular trait. The preselection process consists of looking at several traits and giving each a point value. The point values for each trait are added and the sum for each colony compared to the rest of the test colonies.

Several characteristics are evaluated quickly and simultaneously requiring only several minutes per colony. With a little practice, assigning point values to various traits becomes second nature. It is helpful to have a second person to record data. Instead of the tedious job of counting the number of brood cells to evaluate brood viability, or counting the number of stings in a leather patch to determine temperament, or timing how fast dead brood is removed to determine hygienic behavior, etc., a beekeeper's evaluation and a point value system eliminates unnecessary work and allows a much broader base for selection.

Characteristics include:

1. **BROOD VIABILITY;** Selection for high brood viability enables us to maintain the type and number of sex alleles essential to the integrity of our population. An estimate of

PRESELECTION DATA								
	Colony 1	Colony 2	Colony 3	Colony 4	Colony 5	Colony 6	Colony 7	Colony 8
Brood Viability	85-90%	90-95%	75-80%	85-90%	85-90%	95+%	85-90%	90-95%
Temperament	5	4	5	4	5	5	4	2
Spring Buildup	5	5	4	3	3	5	5	4
Cleaning	4	4	3	4	4	4	2	3
Disease	0	0	0	0	0	0	CHB	0
Swarming	4	3	4	4	4	4	4	4
Color	5	5	5	5	4	5	4	3
Total Score	23	21	Out	20	20	23	OUT	16

A selection index is used in the preselection process. A point value of 1 to 5 is given to rank the desired traits. In this example; Colonies 1, 2, 4, 5, and 6 have been included in the honey production test, while Colonies 3, 7 and 8 have been eliminated from the program. Colony 3 has been eliminated for low brood viability, Colony 7 has been eliminated for chalkbrood and Colony 8 has been eliminated because of a low total score. Based on the preselection results, the high scoring colonies are given the weight gain test. The top producing colonies are selected as breeders.

"A successful breeding program takes time, planning and hard work."

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the percent brood viability is determined with a quick look at the brood pattern. Queens with a brood viability of *less than 85%* are eliminated from the program. For example, Colony 3 in Figure 2 has been eliminated for this reason.

2. **SPRING BUILDUP;** Colony buildup in response to early spring pollen and nectar sources is observed. This is ranked by comparison *between* colonies.
3. **TEMPERAMENT;** Using a minimum amount of smoke, colony behavior is noted. We select for calm bees and queens which go about their business when being worked. Selection *against* runny, flighty or aggressive bees is made.
4. **CLEANING BEHAVIOR;** The *presence and/or removal of debris* from the broodnest, storage combs, and bottom board is observed.
5. **INCIDENCE OF DISEASE;** The *occurrence of disease* is determined. Negative points are given for any indication of a minor disease. Colonies showing any sign of American Foulbrood or Chalkbrood are eliminated from the program. For example in Figure 2 colony 7 has been eliminated from the program because of chalkbrood.
6. **SWARMING;** No swarm control is practiced. Observations are made of *swarm cells* during peak production. The test queen is clipped and marked with a numbered tag for easy identification.
7. **COLOR;** *Consistency in color* is an important marketing tool and an easy trait to control. Color selection of virgins and drones is made during the insemination process.

Based on the preselection results, the highest scoring 100 to 150 test colonies are moved to a reliable honey producing yard for final evaluation of industry. For example in Figure 2; Colonies 1,2,4,5, and 6 were included in the honey production test while Colonies 3,7 and 8 have been eliminate during preselection.

Evaluation of Colony Industry-Honey Production

In our selection program honey production is paramount. To be practical a simple field test is used. Whatever characteristics are responsible for high honey production — these are desired. Instead of taking tedious measurements of tongue length, nectar loads, number of foraging trips, longevity, oviposition rate of the queen, or whatever traits you feel contribute to high performance, a simple weight gain test is used. Dr. Tibor Szabo has shown that short term colony weight gain during the honey flow correlates to colony performance over the entire season.

During our nectar flow in early April, colonies are supered and weighed. Ten days later the colonies are weighed again and the total weight gain and the percent weight gain tallied. The top producing 35 to 50 colonies are selected as breeders. For example in Figure 2, Colonies 1, 2 and 6 have been selected. This test is accomplished quickly with minimal colony disturbance. During the honey harvest we do not have the burden of weighing supers or trying to figure out which super came from which colony, the data has already been collected.

After the honey harvest, the selected colonies are inspected to confirm the identity of the queen, checked for swarming and for any evidence of disease. A graft is made from each breeder queen, the daughter queens are instrumentally inseminated and the new test population established. The selection cycle is repeated.

Introduction of New Stock

The CPBP is exclusive in that it is free from the uncontrolled introduction of genetic material. New material can be added to include new traits and/or new sex alleles to the population. The new stock is carefully observed and tested before introduction into our gene pool. This can dilute some of your selection efforts, though it can also add a needed element to your population.

Discussion

The main objective of this program is to provide consistent, high quality stock. We hope this review will encourage other beekeepers to use this system to develop and improve their own stock. The use of scientifically based breeding programs will enable us to improve the economically important characteristics of the honey bee and should enable us to exclude the African honey bee from our populations. The important point to be made is bees respond favorably to selection. Some breeding systems work better than others. We need to increase and improve the selection of honey bees.

A quote from a friend, Mel Greenleaf who runs the stock selection program at Hybri-Bees, Inc., sums it up this way; "Stock improvement is not quick and it is not easy". A breeding program takes time, careful planning and a lot of work. Stock development does not happen overnight. Bees have evolved over thousands of years and the goal of any breeding program should be to find and enhance desirable characteristics.Δ

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Life Will Go On

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

". . . at that moment I knew that spring was here, and I had beekeeping chores that needed to be done."

What a long winter it has been and yet how quickly it passed. Just last October, the word was released that Varroa had been identified in the US. Then almost like a war breaking out, we all waited for the news from the various "fronts". Word from one state that mites were found in colonies that had come from another state was common news. It seemed that the continental US became a cross-word puzzle of who had moved bees from where. Then, just as the story was becoming complicated and our international neighbors became duly concerned about the breadth of the Varroa occupation, winter covered the entire scene with an environmental ceasefire. During the interlude, beekeepers and regulatory people discussed — heatedly — all aspects of the problem and control alternatives were explored. Most of these explorations had a dead end.

Chemical companies got into the foray and new chemical weapons were introduced. Varroa research projects were pushed mercilessly in states where climes were appropriate for studies during winter months.

As we watched the various states anguish over identification techniques, the weekly reports of new invasions kept our complete attention. Scientists and teachers inundated us with biological and behavioral details of the new vermin. Beekeeping bustled with concern and activity. Plans were made, and are still being made, and changed many times over; all for the new spring campaign. In retrospect, we don't know exactly how the mites got here. Doubtlessly someone brought them to us. We don't know exactly where they are within the US; however, due to the clues offered by states having confirmed finds, we do have an idea of where to look. We have some potential control methods that seem to be good, but probably not excellent. This seems to be the quiet before the storm — before the second wave that will be coming with spring and summer of 1988.

If one had to list good things about Varroa mites, the list would be pitifully short. One item on that list would be that it momentarily has taken our minds off Africanized bees. New problems detract from old problems — that happens a lot in human nature. But rest assured that the Africanized bees have not gone away. Contrariwise, they are methodically progressing in our direction. Our knowledge of these miscreant bees has improved greatly, but to not the extent that anyone is saying they won't get here. Most of the authorities are even uncertain where "here" is. Varroa comes across as being a clear bee problem. After all, there is little chance of Varroa acquiring the reputation of being a killer of people and helpless animals. Superficially, Varroa seems content to specialize in trying to destroy every *Apis mellifera* in the world. That's a big task.

Africanized bees have always tended to be highly visible as opposed to Varroa's technique of being furtive and hiding within honey bee brood cells. For all the stories circulated about Africanized honey bees, their threat of greatest concern is with the general public. To most people, bees are bugs; worse yet, bugs that sting, and that is a major concern. Add to that, some old movies that had absurd plots about KILLER BEES, and the beekeeping industry is faced with a dilemma. I think that the public is essentially aware that the original stories were exaggerated, but one thing from those movies dies hard. That thing is the conception that Africanized honey bees will come across the US/Mexican border in marauding hoards and, overnight, begin to attack everything in sight. That is not the most probable scenario. Rather, the bees will interbreed with the indigenous population as they move into an area. Only after months (possibly a few years), will the true attributes of Africanized bees begin to show. No doubt, aggressive differences will be noted in managed colonies that had otherwise been quite docile, but nothing like the movie depictions. I suppose in that regard the Africanized bees' invasion will be like the Varroa invasion — sneaky. Africanized bees do not appear to offer the long term beekeeping problem that Varroa affords. Negative public reaction will be the Africanized bee's claim to fame.

There are more than two fronts in this biological war on beekeeping. Remember Tracheal mites? The little mite that lives in the breathing tubes of the bees has not gone away any more than Africanized bees. They just got pushed aside (probably too far aside) after Varroa arrived. Tracheal mites could still very well prove to be a major campaign in this war. Our scientific and educational resources have simply been overwhelmed with the barrage that has been coming our way. The USDA laboratory at Westlaco, Texas

has continued to research the tracheal mite. Additionally, a project conducted by the Ohio State University and the University of California has been quietly proceeding with positive research results. That's good. The tracheal mite story never had an ending, but was interrupted by the Varroa story. Menthol used as a control agent is still being researched and seems to offer some degree of control.

How is beekeeping to deal with all this? As I have said before, if your goal is to have a staid beekeeping operation, these obstacles are, in fact, problems. If your objective is to be challenged by beekeeping — to be forced to develop new techniques and to stay informed on current events — then these obstacles are challenges to be met with zeal. Several weeks ago, on one of those bright days when Ohio was covered with snow, I went for firewood and per chance noticed a few of my forlorn-looking colonies across the way. I popped the tops of the colonies and there they were, waiting for Spring and me. At that moment, things seemed to be in better perspective. Beekeeping does have challenges to face. I don't know the solutions, but at that moment, I did know that Spring was coming and I had beekeeping chores that needed to be done. I'll bet that in the long run, things will be resolved enough that our beekeeping life will go on. Not without changes, but life will go on.Δ

Removing Bees

DEWEY M. CARON
University of Delaware

Swarm of bees in a small tree. If a beekeeper doesn't collect them they will move on to a new homesite.

Occasionally, even honey bees are considered pests, and must be dealt with as any other unwanted insect. Because of the present attention focused on bees and beekeeping, it can only be a positive gesture to aid homeowners, pest control officers and others, with sound information on how to deal with honey bees when they are pests. We suggest you copy this article and distribute it to any person or agency who has questions or problems. A picture is always worth a thousand words, and a free "how to" will aid them, and benefit the public image beekeepers have.

The natural nesting site of the honey bee is a sheltered, darkened enclosure. Beekeepers keep their colonies in boxes called hives. Besides the hives of beekeepers, "wild" or "escaped" bee colonies nest in tree hollows or in structures such as attics, between the wall studs of houses, garages, or other buildings, within porch roofs or in similar areas. Bees also nest in tree hollows and dry caves.

Whether living in a hive or the side of a building, when a bee colony becomes too large it divides by swarming. A honey bee swarm contains thousands of workers and their queen. A swarm of bees will cluster temporarily at one location while a few scout bees locate a new home. When a suitable location is found the swarm moves as a group into its new quarters.

Bees nesting in locations inconvenient to humans are considered pests. Although valuable to a beekeeper, the homeowner has little need for a swarm that might land and cluster on his/her property. Likewise, few people want a bee colony nesting in their house or another structure on their property. Some beekeepers earn extra income in removal of unwanted bee colonies though many states label this as pest control which is strictly regulated and often requires training, license, insurance, etc.

Swarms

A swarm of honey bees is a temporary inconvenience that may last a few hours or days. Honey bees in a swarm are usually gentle because they have full honey stomachs. If left undisturbed, a swarm will locate new quarters and often disappear as quickly as they appeared.

Local beekeepers collect swarms to put into their unused hives. They seldom demand a fee for their effort since the bees from the swarm will grow when captured in a hive and usually produce honey the next season. Beekeepers leave their names and phone numbers with local county Extension agents or local police. Some bee associations produce lists of members who are interested in swarm capture.

It is not always possible to locate a beekeeper or practical for the beekeeper to capture a swarm. REMEMBER a swarm is only temporary and will move away as soon as the bees find a new home. In only unusual situations will a swarm remain to build comb and not move from a cluster site.

Bees in Buildings

Bees nesting in buildings, unlike swarms, are a great problem. There is no easy, convenient method of removing the bees. It may be necessary to kill the bees and if the bees have been using the same location for awhile, the nest itself needs to be removed. Although killing the bee colony may be a disagreeable task for some people who know the honey bee as an important insect helper of man, in some nesting locations bees are pests and, unfortunately, must be treated accordingly.

Eliminating the Bees

The first step in eliminating the pest problem is locating the nest and getting rid of the adult bees. Several materials may be used to poison honey bees.

1. Aerosol sprays. Aerosol sprays are available specifically to eliminate hornets, wasps, and bees. Other aerosols such as those for ants or roaches also will kill honey bees.

2. Spray concentrates or dusts. Some insecticide liquids or dusts are also very effective for controlling bees and wasps. Equipment to mix and apply such formulations is necessary.

The insecticide should be applied at the entry/exit area of the nest and, if feasible, directly onto the nest (drilling small holes to the nest may be necessary). The nest itself may be some distance upwards from

the entry/exit area and is always suspended from some overhead support. Several repeat applications of insecticides are usually necessary to kill the bees. Whenever using an insecticide check the container label for proper concentration and safe use.

Removal of the Comb

Soon after moving into a new home, honey bees build beeswax comb to store honey and rear their young. After the adult bees have been eliminated, their nest should be removed. If this is not done, the honey and beeswax comb of the nest will attract other insects and animals and the odor of decaying and fermenting honey will become quite evident. Beeswax comb left unattended by bees will break and be attacked by wax moth; if honey soaks into walls it will become impossible to paint or wallpaper over the stain which will remain moist to the touch for a considerable period of time and appear unsightly.

In some instances, it will be quite expensive to attempt to remove the nest; the homeowner may be willing to put up with the smell and take his/her chances of damage from honey soaked walls. For nests in trees or garages, nest removal usually is not necessary.

Once exposed, the beeswax comb of the nest can be cut or broken from its overhead attachment points. If a poison spray has been used directly on the nest do not attempt to salvage the honey. Otherwise the honey can be cut from the nest and consumed in the comb or drained to provide the familiar liquid honey.

After removal of the beeswax combs and the bees, the former entry/exit area should be washed with soapy water to help remove residual odors. The nest area should be filled with insulation or blocked off with a similar material. Any future entry must be blocked (as well as other potential areas) to insure that another swarm does not select the same location.

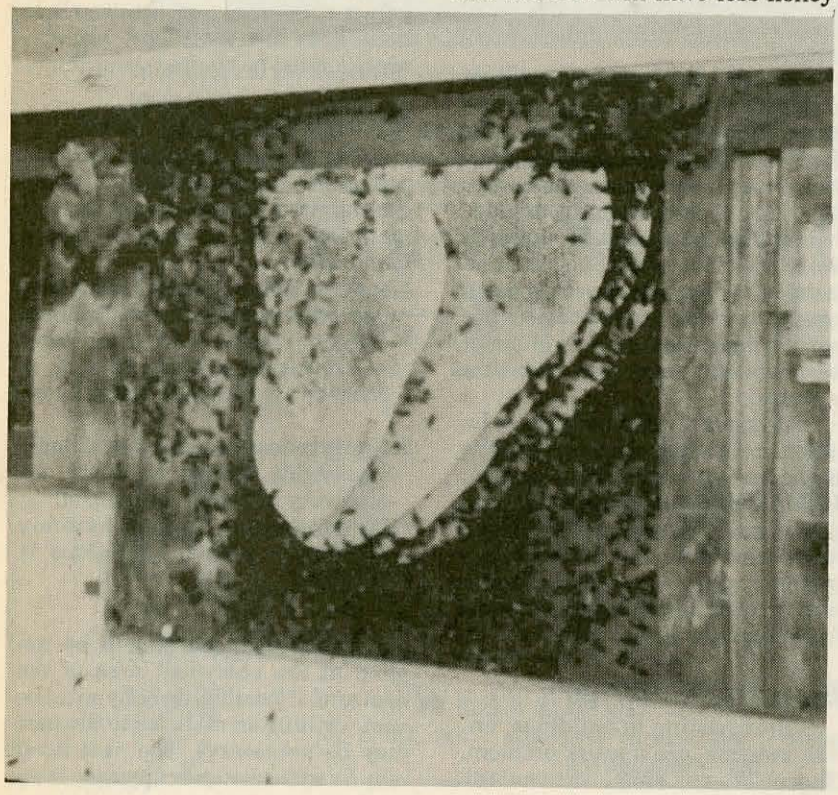
Transfer of Bee Colonies

It is sometimes possible to remove bee colonies from houses, trees or other natural dwellings by transferring them into beekeeper hives. Bee colonies that inhabit box hives, log gums or other equipment in which the combs are crosswise or otherwise not contained properly by the frames might also be transferred to hives with movable frames so they can be properly managed. In most states it is illegal to keep bees in box hives, gums or crosscomb hives because such colonies cannot be inspected for disease.

It is preferable to transfer bees during the spring or early summer. Colony populations will be smaller and the bees will have less honey stores and brood comb than later in the year. Transferring a colony early in the active season will also allow the bees time to build up their colony population following transfer and leave them enough time to collect sufficient stores for successful wintering.

A swarm of bees that built their parallel comb nest in an exposed location. Except for the tropics, such colonies rarely survive the year.

If a bee colony cannot be fully exposed, the adult bees may be trapped into a dummy hive. To trap a colony, close all entrances except one. Fashion a screen cone over the single remaining entrance that will permit the exit but not a return entry of the bees to their old home. This cone can be made of wire screening and should extend 12-18 inches outward, narrowing from several inches in diameter to an outer opening of 3/8ths inch. Place a dummy hive supplied with foundation or preferably a hive with one or more drawn combs adjacent to the screen cone opening and hold it in place by a temporary scaffolding. As the foraging bees exit their nest they will be unable to return to their home and most will adopt the substitute hive. After two or three days of trapping place a caged



A colony of bees in the side of a building. The siding has been partially removed to expose the parallel combs of wax. Colony present only about 2 months.

queen in the dummy hive in her cage. Release her or allow the bees to release her after several more days so the substitute hive may function as a normal hive. In about two months, the substitute hive will be a normal functioning colony and it can be removed from its temporary position. Most of the bees from the original nest will have been trapped with this arrangement and will have become inhabitants of the new hive.

Removing bees from buildings or trees may sometimes be accomplished by direct exposure and transferred to a movable frame hive. After nest exposure, the bees should be shaken or brushed into a new hive. Pieces of comb with brood should be placed in frames and held by string or rubber bands. This last transfer procedure is best done on a cool day or night when the cool weather will help make them less active. Hopefully, the queen can be transferred without injury. Check the new hive in a couple of weeks to be sure a queen is present. If not, introduce a new queen because your effort will be for naught unless the new hive has a functioning queen.

Transferring bees from buildings or trees is always messy and frequently results in numerous stings. Queens are often lost and many workers crushed or drowned in honey. It is suggested that this last technique be tried at least once and then a decision made as to its value in transfer of bee colonies. To eliminate problem bees in structures or bee trees it is usually much easier to kill the adult bees and then expose their comb to wax moth and other pests for practical removal.

Transferring Bees From Non-Standard Boxes or Gums

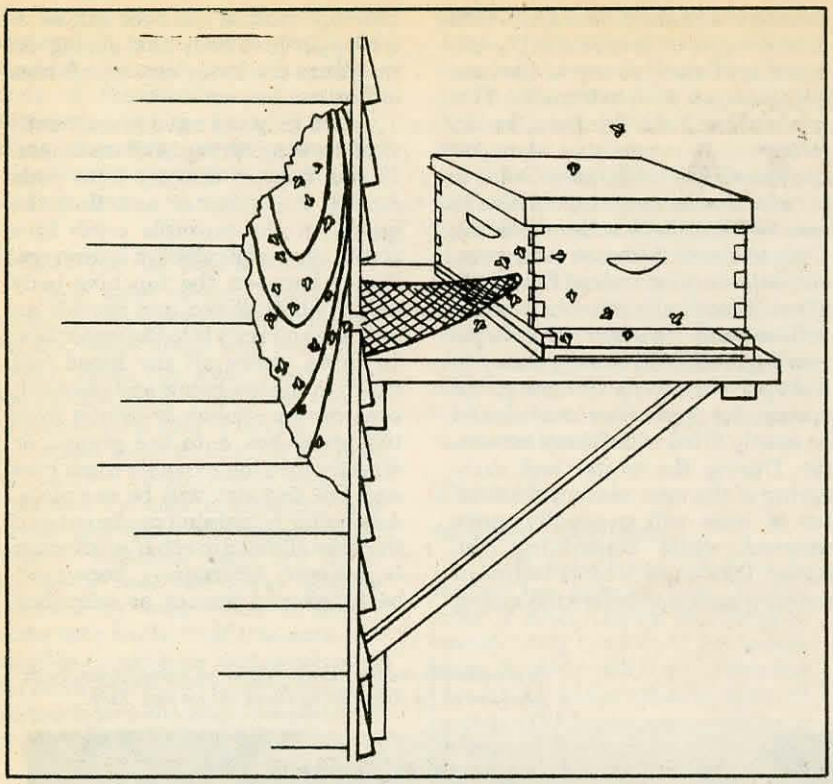
Several methods may be used to transfer bees from crosscomb hives, log gums, or other similar structures. Bees do not necessarily have to be transferred with comb from their own home. Generally, however, transferring first the bees and then including some of their comb, especially brood comb, results in a more rapid recovery and population increase in their new home.

Transfer Via Expansion

The easiest method to accomplish transfer of bees into standard movable comb equipment involves placing a standard hive body with drawn comb, or foundation if comb is not available, on top of the box, gum, etc. you wish to transfer. This can be done if the top from the old colony can be removed or when you can somehow provide large holes to permit bees access from old hive to new. With tape or other material, close the area between box, gum, etc. below and standard hive body above. Eventually the colony below will expand upwards and begin rearing brood and storing honey in the upper hive body. If done in the spring, the upper hive body should be nearly filled with honey for winter. During the winter and early spring of the next season, the cluster of bees will gradually move upward while consuming the honey. Due to the normal decline in colony population before the spring buildup, most of the bees will be in the upper hive body next spring. At this time the lower crosscomb hive or box can be removed.

You may not have to wait until the following spring in all instances. If you inspect the top hive body during the summer and find the queen in the movable comb hive above, you can place a queen excluder between the top hive body and the bottom box and provide an entrance directly into the upper box. In three weeks all the brood will hatch in the box below and the adult bees can be shaken or driven from the lower box onto the ground or directly into the movable comb hive and the transfer will be complete. Any honey remaining can be cut and the bees allowed to rob ***if no disease is present.*** Alternately, honey can be fitted into frames as described

A crosscomb colony. Bees might be transferred by expansion or by drumming them into a new hive.



An arrangement to trap bees from the side of a building. Screen cone permits exit but not reentry of foragers who adopt substitute hive on temporary platform.

above and given to the bees in their new home now properly supplied with movable comb.

The main advantage of transferring by expansion is that there is little or no disturbance to the bee colony and it requires few manipulations by the beekeeper. A disadvantage is that transferring is a slow process.

Drumming

Another method of transferring bees is by drumming them out of the old hive. To drum bees, remove the bottom of the old hive and turn it upside down. Place a new hive with drawn comb or foundation on top of the inverted box and close all openings. Drum vigorously with a rubber mallet, stick or hammer on the side of the *old* hive continuously for eight to ten minutes. This causes the bees and queen to move upward. Smoking the old colony before drumming is also helpful in starting the bees upward. When most of the bees have moved up into the new hive, a queen excluder is then placed between the new and old equipment and an upper entrance provided. After several days, the new hive should be checked for evidence of the queen. If the queen is not above, the queen excluder must be removed and the drumming process repeated. Three weeks later, after the queen has been confined above and all the brood has emerged below, the old hive may be removed and discarded.

A variation of the above procedure would be to remove the combs from the old nest immediately after drumming the adult bees out and piecing the comb into empty frames for the new hive. This is accomplished by cutting large pieces of brood comb and then arranging them on a flat surface in empty frames. The pieces are held in place by wrapping string or stretching rubber bands around the frames. It is advisable to transfer only comb containing worker brood. Empty comb or comb with drone brood should be discarded. Comb with honey can be cut so the bees may rob it or pieced into frames as above for worker food.

The advantage of drumming is that it is quick and requires little manipulation by the beekeeper. When brood comb is cut and placed into frames the colony will expand quickly in its new home and have a good chance of winter survival.Δ

NEWS RELEASE

It's swarm season again, and the _____ _____ wants to remind you of some of the Do's and Don'ts of dealing with swarms.

A honey bee swarm is a natural biological function of a colony of honey bees. Although occurring most frequently in the spring, they may be seen at any time during the summer.

Following are some common sense rules that _____, _____ of the _____ suggests you follow if you find a swarm in your yard . . .

1. Remember, honey bee swarms are as a rule gentle and non-aggressive. However, this depends on how long they have been there, so caution is always suggested.
2. Contact _____ at _____ or _____ at _____ for the names and phone numbers of beekeepers who will remove the swarm for you.
3. Swarms are simply clusters of living, moving honey bees enroute from an old home to a new one. Occasionally they will build an exposed honey comb nest in a tree or bush. They NEVER build nests of paper or mud.
4. Honey bees are brown or yellow with black markings. They are also fuzzy, NEVER shiny.
5. Don't spray the swarm with insecticides to remove it. This is a violation of ANY pesticide label.
6. Don't spray the swarm with a hose to remove it. This technique rarely works, and will only make removal more difficult for the beekeeper.
7. Don't panic, or be afraid of the swarm. An undisturbed swarm rarely causes problems.
8. Some swarms come from colonies of bees managed by beekeepers, but many also come from wild colonies in hollow trees or other places. Do not assume a local beekeeper is responsible for the swarm in your yard.

Remember, swarming is the natural means of colony reproduction. It is no more unusual than cats having kittens or dandelions producing seeds.

It can also be a unique learning experience for you and your children. Watching a trained beekeeper "hive" a swarm is fascinating, educational and even entertaining.

There is never a "charge" for removing a swarm, as most beekeepers are happy to do so.

We suggest you remove this announcement and keep it close to your telephone.

A public service announcement of the _____ _____ Beekeepers Association.

HOME HARMONY

By ANN HARMAN
6511 Griffith Road
Laytonsville, MD 20879

May, more than any other month, seems to represent Spring and inspires a wide assortment of poetry, including the familiar "April showers bring May flowers". Let us start out the month with a salad.

- **Poppy Seed Honey Dressing**

1/4 cup cider vinegar
1/4 cup honey
1/2 teaspoon dry mustard
1 teaspoon celery salt
1/2 teaspoon poppy seeds
1/2 tsp. onion juice or grated onion
1/2 cup oil (olive oil or salad oil)

Combine vinegar, honey and mustard. The mixture can be heated for ease of mixing. If heated, then cool. Add celery salt, poppy seeds and onion juice. Mix well. Add oil slowly, whisking constantly. Makes 1 cup. This is excellent for:

- **Citrus Fruit Salad**

3 large oranges
3 small grapefruit
lettuce
8 maraschino cherries

Peel and section oranges and grapefruit. Arrange on lettuce leaves. Top with cherry. Serve with the Poppy Seed Honey Dressing. 8 servings.

Favorite Meals from Williamsburg
By C. Turgeon and Staff of Colonial Williamsburg

Cornmeal muffins make an excellent accompaniment to the salad. They are so quickly and easily made that they should be eaten more frequently. Leftover cornmeal muffins can be split, buttered and toasted in the broiler. Let them get a little crusty and crunchy — they are as good as when freshly made.

- **Corn Muffins**

1/4 cup butter
1/3 cup honey
1 egg
2 cups flour
1/2 teaspoon salt
1 cup corn meal
2 teaspoons baking powder
1/4 teaspoon soda
1-1/2 cup milk

Cream butter; add the honey gradually. Add egg and mix well. Sift dry ingredients; add alternately with milk to the butter mixture. Fill muffin pans 2/3 full. Bake at 375° for 20 minutes.

Honey Recipes
North Carolina State Beekeepers Association

Although everyone is busy with bees and gardens, supper still needs to be made. There is no need to spend hours in the kitchen at this time of year, so try this "Exotic and Easy" recipe. First make the French Dressing since it keeps well in the refrigerator. Then the skillet supper can be made quickly.

- **Creamy Honey French Dressing**

1 can (10-1/2 ounce) tomato soup
1/2 cup honey
3/4 cup cider vinegar
1/4 cup water
2 cups salad oil
1 teaspoon salt
1 teaspoon dry mustard
1/2 teaspoon paprika
1 teaspoon celery seed
1 clove garlic, minced or pressed

Combine all ingredients in blender container. Whirl until well mixed and creamy. Keep refrigerated until ready to use. Makes about 6 cups of dressing.

- **Thai Style Skillet Supper**

1 pound ground beef, turkey or pork
5 cups assorted vegetables
Suggested is a combination of 3 or more of the following to equal 5 cups: sliced celery, green pepper, bamboo shoots, mushrooms, bok choy, green onions, water chestnuts, fresh spinach or bean sprouts
3 tablespoons soy sauce
3/4 cup Creamy Honey French Dsg.
2 tablespoons cornstarch
1/4 cup water or broth
1/2 teaspoon ground ginger
Few drops hot pepper sauce or ground red pepper

In large skillet or wok, brown meat over high heat. Drain fat. Add vegetables. Cook, stirring constantly, 2 minutes or until crisp-tender. Add Creamy Honey French Dressing, and cornstarch mixed with water and soy sauce. Continue cooking and stirring until thickened and clear. Season with ginger and hot pepper to taste. Serve over steamed rice or crisp Chinese noodles. Makes 6 to 8 servings.

Honey . . . Any Time
California Honey Advisory Board

It is impossible to go through a busy day without a snack. A mid-morning cup of coffee is always better with a couple of cookies; in the afternoon, a bit of something is necessary to tide you over until supper; and a late-night television show is not complete unless you have a bite to eat. What could be better for all occasions than these!

- **Anytime Snacking Squares**

1/2 cup softened butter
2 eggs
3 tablespoons cocoa
1 cup flour
2/3 cup honey
2 tablespoons milk
1 teaspoon vanilla
1 cup raisins
1/2 cup chopped walnuts

Combine ingredients in a large bowl, mixing until well combined. Spread in a well-greased and floured 8-inch square baking pan. Bake at 350° for 25 to 30 minutes until done. Cut into squares while warm. Makes 16 squares.

Gourmet Honey Recipe Book
British Columbia Honey Producers Association

Honey and gelatin recipes make an excellent combination. However, here is just a little word of caution. Some honey, depending on composition, will make a slightly soft or runny

gelatin mix. This condition is easily corrected by increasing the gelatin amount. Yes, a bit of experimenting is necessary to determine just how much gelatin is needed for your particular honey. But you will never waste a slightly soft gelatin mixture — just give everyone a spoon.

- **Grapefruit Mold**

2 tablespoons unflavored gelatin
1/4 cup cold water
1 cup boiling water
1/2 cup honey
1/2 teaspoon salt
1 cup grapefruit juice
1/2 cup orange juice
1/4 cup lemon juice
1/2 cup chopped walnuts
1 grapefruit, sectioned

Soak gelatin in cold water for 5 minutes; add boiling water and stir until dissolved. Add honey, salt, grapefruit juice, orange juice, lemon juice, and cool. When mixture is slightly thickened, fold in walnuts and grapefruit segments. Chill until firm.

Good and Wholesome Honey Recipes
— American Honey Institute

All of us, at one time or another, get into a rut with our cooking. Vegetables seem to get ignored. Therefore, I am always happy to find a vegetable recipe that is a bit different. Try this one — celery isn't always for salads.

- **Sweet and Sour Celery**

2 cups diced celery
1/2 cup water
1 egg, beaten
2 tablespoons honey
2 tablespoons cider vinegar
1 cup water
2 tablespoons flour
1/2 teaspoon salt
1/4 cup sour cream

Cook the diced celery in the 1/2 cup water until tender and nearly dry. Set aside. Mix remaining ingredients, except sour cream. Bring to a boil, stirring constantly. When mixture thickens, remove from heat and fold in sour cream. Pour over the hot celery and serve at once.

From Mama's Honey Jar Cookbook
Catharine P. Smith

When I turn the calendar to May, I know that strawberry season is arriving. Each year I try new recipes, and there are so many! Strawberries seem to inspire cooks. Here is a recipe I tried last strawberry season. Now, you try it this year.

- **Honey Lemon Cream with Fresh Strawberries**

2 eggs
1/2 cup honey
1 cup milk
1 cup light cream
1/4 cup lemon juice
1 cup crushed and sweetened strawberries
a few perfect whole strawberries for garnish

Beat eggs until lemon colored. Gradually add honey, beating constantly. Combine milk, cream and lemon juice and add to egg mixture. Freeze, as you do ice cream, until just firm. Add crushed berries and continue freezing until firm. Garnish each serving with whole berries. Serves 6.

Better With Honey
Toronto District
Beekeepers Association

Strawberries that are not quite perfect can be made into juice. This can be canned or frozen to use later in the year when fresh berries are unavailable. The recipe also recommends that a delicious drink can be made by mixing 1 part strawberry juice with 4 parts apple juice.

- **Strawberry Juice**

8 cups strawberries, stemmed and sliced
1 cup honey (adjust to taste)

If a juicer is available, juice the berries. Otherwise, they may be put into a blender and then strained. Heat juice and honey. Process for keeping with your favorite method.

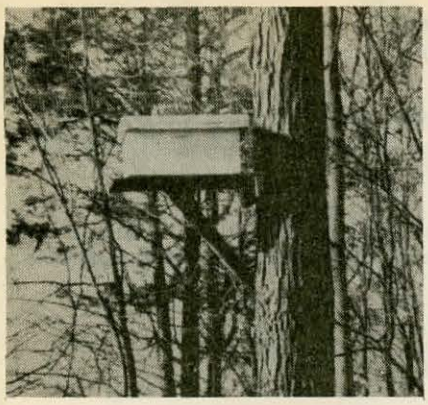
adapted from *Putting It Up with Honey* — Susan Geiskopf

So, as we all tend our gardens and work our bees this month, we may well agree with Chaucer's comment: "May, with all thy flowers and thy green, Welcome be thou, fair fresh May".

Answers to A Honey Bee Game from Page 259

1. F . . . see definition of "domesticated " in dictionary.
2. T
3. F . . . pollinating trillions of flowers is greatest.
4. T
5. T
6. T
7. F . . . the Bible suggests the ant.
8. F . . . bee balm is a member of the mint family.
9. T
10. T
11. T
12. F . . . cells are hexagonal (6-sided).
13. F . . . workers take care of intruders.
14. T
15. F . . . this protein rich food is made in glands in the heads of young bees.
16. F . . . there were no honey bees here before Columbus.

BAIT HIVE . . . Cont. from Page 273



Bait hive in position sitting on a platform.

Therefore, choose a spot in the tree with a nearby overhanging limb that can be used in lowering the hive to the ground by rope.

Bait hives may be placed in position either by attaching them directly to a tree or other structure or else by setting them on some type of a stand or platform. As shown in figure 3, a bait hive can be hung by drilling holes and slots in one side and hammering a couple of large nails through them. The method that I prefer is to build a simple platform for the bait hive to sit on. This platform consists of a short piece of two by four nailed to the tree with a piece of plywood nailed to the top edge. Another piece of two by four, with each end cut at a 45° angle, is then attached to the center of the underside of the plywood and to the tree to act as a brace. Ideally, the platform should also be painted to preserve and camouflage it. You may also want to consider placing a heavy stone on top of the hive to ensure that it isn't blown down by strong winds.

Removal and Transfer

Once a swarm has occupied a bait hive the task of removing it and transferring the bees to regular equipment begins. This operation should be undertaken (preferably with assistance) in the early evening or on an inclement day when few bees are flying, to minimize the number of foragers left behind. The first thing to do before removing the hive is to screen the entrance. The next step is to get the hive out of the tree and safely on the ground. This is often no simple task if the bait hive has been occupied for any length of time and there has been a good honey flow on. If the hive has not been occupied long and is still light it can be simply carried down the ladder. If it is heavy a more prudent approach is to tie a rope securely around the bait hive, throw the other end over an overhanging limb and carefully lower it to the ground.

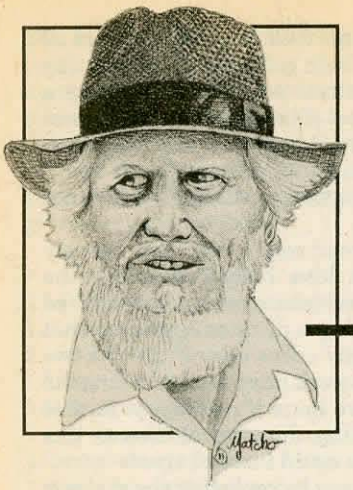
Moving a large colony of bees in a bait hive on a warm evening can cause it to rapidly overheat and smother due to the hive's small entrance. Therefore, haste is important in transporting the colony. If you are moving the colony a considerable distance, or if it is particularly hot, replace the cover with a moving screen and nail it to the top of the hive.

If the eventual permanent location of the colony will be more than 2 miles away you can take it there immediately. The following day, after the bees have calmed down, transfer them with their frames to regular equipment. If the eventual permanent location of the colony will be less than two miles away, first take the the bait hive several miles away and leave it there for a week before transferring it to its permanent location.

If you don't need or want more hives you can unite the bait hive colony with another colony. One easy method is to first transfer bees and comb from the bait hive to a standard hive, complete with cover and bottom board, and to place this on top of an established colony. If there is no nectar coming in at the time feed a quart or more of syrup to both colonies. The next day unite the two colonies by placing a single sheet of newspaper with several slits cut in it between the two hives. Prior to uniting, you may wish to kill one of the queens, although this is not essential.

Alternatively, you can simply place the hive body containing the transferred swarm over an established colony using a division screen so that their colony odors mix. Unite the two colonies a week later, again feeding the bees before hand if necessary. Rather than uniting the two colonies at this point, you could instead create a two-queen colony by replacing the division screen with queen excluders. This is worthwhile if there is enough time left until the start of the honey flow for the colony to continue building up.

Additional information on bait hives may be obtained for a nominal fee by ordering: Information Bulletin No. 187 "Bait Hives for Honey Bees" by Thomas D. Seeley and Roger Morse; from Cornell University Cooperative Extension. A free catalog of extension publications and prices is available by writing the Cooperative Extension Distribution Center, 7 Research Park, Cornell University, Ithaca, New York 14850.



The European Community and Varroa

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

"We must join the international attack on this pest."

I spent several days with Raymond Borneck, Director, Institut Technique de L'Apiculture, 91440 Bures Sur Yvette, FRANCE in February, 1988 talking about varroa disease and their research on controlling it. Borneck did the original work with the acaracide fluvalinate, which has been approved for use by the FDA as a regulatory survey tool to find mite infestations. He has been working closely with the Zoecon Corp. to get this chemical approved for use against varroa in France.

I was privileged to receive from him raw data reports of unpublished material to analyze at leisure before his paper has even been written much less approved for publication. But, what I want to present in this article is the logical way the EC (European Community) countries are fighting varroa.

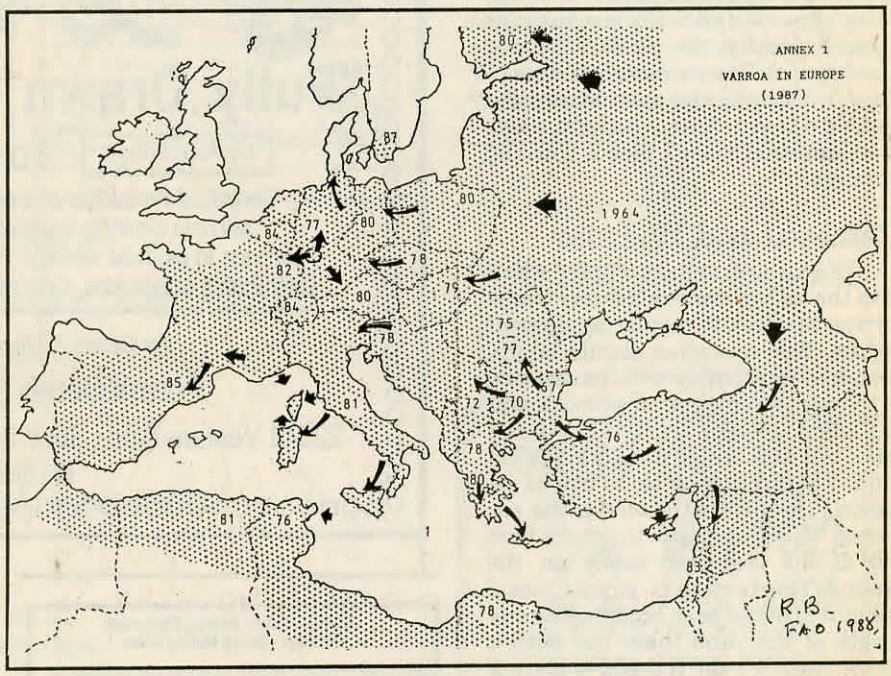
You may have read that in 1992 many of the restrictions between these countries are to be lifted and they will have many common rules and regulations, such as our Federal Government has here. These countries are Germany, France, Italy, England and Spain, to name a few; and when this event takes place, the EC will be a powerful economic and political entity. The beekeepers have decided they can't wait that long and are working for a uniform set of regulations governing the use of chemicals in bee colonies, particularly chemicals used against varroa.

The idea, of course, is that research done in France on fluvalinate will be acceptable to all EC countries and that the EC will approve these chemicals for use, not just in France. This group is called "Coordination Group on Varroasis" which is under the auspices of COPA (Comite des Organisations Professionnelles Agricoles) and COGECA (General Committee of Agricultural Cooperatives in the EC). Raymond Borneck was elected president; they meet at irregular intervals from 2 to 6 or more times each year.

My thoughts are that we should be in on this too. Suddenly we have varroa mites and virtually no experience controlling it. To me, in all my naivety about government regulations and such, why can't the USA and the EC have common requirements for acceptance of chemicals to be used in our fight against varroa? Isn't that logical to you, too?

So, I popped the question to Mr. Borneck — would this be acceptable to him, and to the others, that a representative of the USA came to their meetings? Now, Borneck is one heck of a nice guy. I stayed in his home for about four days, ate his food, drank his wine, met and talked with his three sons and I like the whole family. Sure, he said, we would welcome the Americans and, of course, I didn't expect any other kind of response.

Roger Morse has suggested, quite strongly, that research people in the USA should go to Europe and see what our friends and relatives are doing about varroa, and what their experience is and has been. We should not expect our research people to start from scratch and have to learn what the Europeans have been learning for the past ten years.Δ



The map prepared by R. Borneck shows the rapid spread of the disease across Europe, including the first case in 1987 of varroa in Sweden. It also explains the reasoning that there is no stopping this pest once it is established, as it is now in the USA.

SIFTINGS

CHARLES MRAZ • Box 127 • Middlebury, VT 05753-0127

"There is no question, Varroa is going to make us better beekeepers."

I recently received a letter from a beekeeper friend of mine in Germany, who worked for me in VT for a year, about 25 years ago. He is now keeping bees near Frankfurt, Germany. About 10 years ago the Varroa mite was brought into Germany near Frankfurt and quickly spread thru the whole country. For a number of years, he worked with the Govt. on the control of this mite. When it first came to Germany, it caused big losses and was a major problem. First they tried to contain the mite, as some U.S. states are trying to do now. When it once gets into an area, wiping it out, or even trying to confine it by restricting movement of bees seems impossible. The mite apparently spread quickly, somehow hive to hive, even without spreading equipment. We must learn to not waste a lot of time and money trying to eradicate varroa, history has shown it cannot be done.

What really surprised me was that he said now, after years of experience with varroa, it also has its positive side. In some ways it has proved to be beneficial. This may sound like treason, especially after listening to the crying and weeping we hear on how bees are going to be wiped out, with the tragic loses to agriculture. Well, to be sure this is the way it looks, but according to someone that has lived with it for 10 years, "it ain't so", it does have some beneficial effects.

But, with varroa mite, there is no more "let alone" beekeeping in Germany. In just 2 to 3 years those beekeepers end up with dead hives. Some of them bought more bees, and they too died out. For those that take care of their bees however, there is little work in effectively controlling the mite. They are now getting big crops of honey again, and for some reason, my friend said a new interest has been generated with new beekeepers. He cannot explain it, but it appears to be a fact.

A new, effective chemical treatment is now being used in Germany to control the mite. The chemical is a miticide called Klarton and is made by Sandoz. This appears to be similar to Fluvalinate, that will probably be used in the U.S. My friend said it appears to be harmless to the bees, and if used in the fall, not a trace of it can be found in the hives because so little of it is used.

He said one liter (one quart) of this material costs about $80.00. With this amount you can treat 2,500 colonies. This is cheap therapy.

The method of application he describes sounds like a beautiful system. Ten ml. (about 100 drops) of Klartan is dissolved in one liter, (1,000 ml.) of water. You then wet a sheet of Kleenex with 3-4 ml. (30-40 drops) of this diluted solution and let it dry. When dry, place the sheet on top of the frames of the top brood super, and cover up the hive. Of course, all honey supers must be removed before you treat.

Then the bees start tearing the kleenex to bits, and carry it down thru the hive and dump it outside. While this cleaning is taking place, many bees make contact with the chemical on the Kleenex and transmit the chemical from one bee to another, apparently killing all the mites not protected in sealed brood cells.

The idea is to do this when there is no brood in the hives. Here in the north, brood is usually all hatched in Oct. and Nov. In warm areas, where there is brood all season, cage the queen as soon as the honey flows are finished, and leave her in the hive between the frames for 21 days. By then, brood is all hatched and all mites will be exposed to the chemical. The queen is released, and you can begin treating.

It is recommended that all hives in a geographical area are treated to prevent mites from spreading from infested hives to clean hives. This will be impossible to do, I believe. But, those that do not clean up their hives will soon not have bees. Varroa will take care of the problem very nicely.

I have not bought bees or queens for years, so our bees should be clean now, but no doubt the mite will soon be coming in, if it is not already here. It is in N.Y. and Maine, so we are right between.

The only cloud in the sky with any chemical control is that mites are notorius for developing resistance to any chemical used to control them. It takes about 20 generations for them to develop resistance to a chemical. If the mite has 10 generations a year, then in 3 years they should become immune. However, if they are wiped out every fall there may be fewer generations per a year than normal. Time will tell. In the meantime there is no question, varroa is going to make us all better beekeepers. If you don't learn, you won't be a beekeeper very long. Eric Kaiser is scheduled to speak at the Beekeepers of TN meeting this month. See the Events section for complete information.Δ

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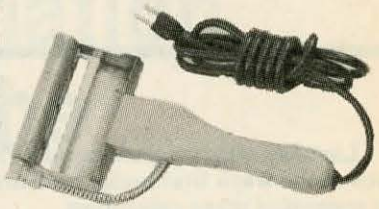

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Photo Contest Winners

Last January, we announced a Photo Contest to display some of the ways that honey bees are used in Advertising. We suggested three categories:

- **Good:** Meaning accurate representation of the industriousness of honey bees, with 'good' accompanying art.
- **Catchy:** A 'catchy' use is always appealing and involves an above average mind to think of.
- **Tacky:** No redeeming social value. The kinds of signs that make beekeepers shudder.

Here are the winners:

Good: Frank Tyler
12 Bayview Road
Amityville, NY 11701

Catchy: A Tie
Frank Tyler
12 Bayview Road
Amityville, NY 11701
and
Betty O'Hara
927 W. 47 So.
Wichita, KS 67217

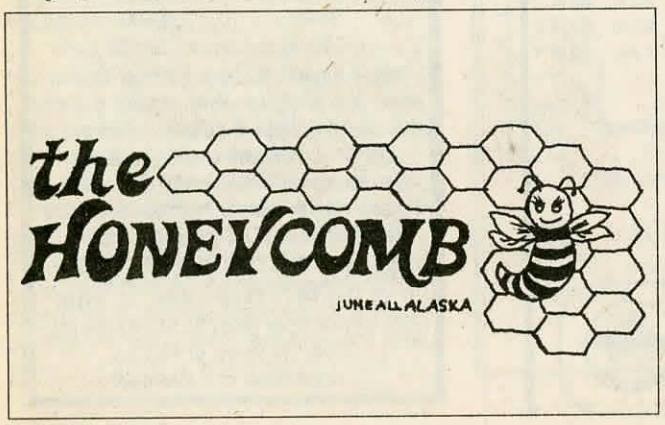
Tacky: Frank Tyler
12 Bayview Road
Amityville, NY 11701

Winners each receive a FREE 1 year subscription to *Bee Culture*, and a big Thank You from the Editor.

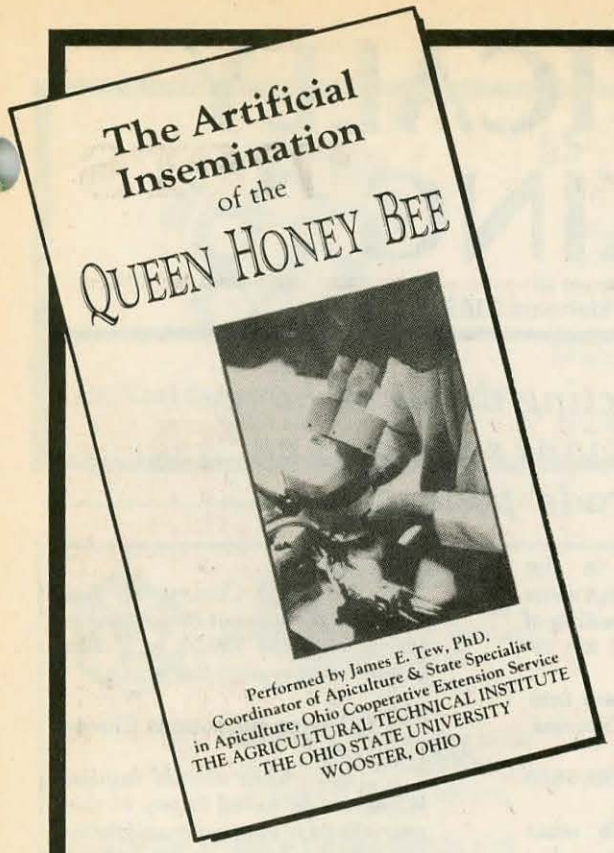
Who better to mind the kids? Good.

Beesy to Serve You? — Catchy.

The perfect ad for a fabric store. — Catchy



I think the picture says it all! — Tacky.



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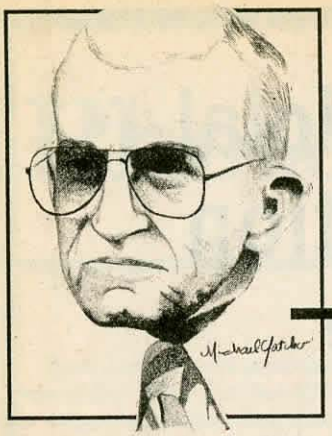


POLITICALLY SPEAKING

GLENN GIBSON • Minco, Oklahoma 73059

"Instead of protecting domestic honey producers, politicians seem bent on pushing a 'free trade' policy."

During the last dozen years U.S. beekeepers have made several attempts to save their domestic market by asking the government for some kind of protection from imports. Little was accomplished until 1985 when Congress approved a market-loan concept for honey. This has worked quite well, but the future of subsidized farm programs is nebulous. Instead of protecting domestic producers, the politicians seem bent on pushing a free trade policy.

In current negotiations under the General Agreement on Tariffs and Trade (GATT), the United States has proposed total liberalization of international trade. This probably means an elimination of all trade barriers and farm subsidies. A recent analysis by the Economic Research Service (ERS), USDA, shows that there are no "free traders" among the world's agricultural trading countries. I am guessing that this will not change in the foreseeable future, even though GATT signers have agreed to work toward that end. And this means that honey going to the Economic Community's (ED-12) countries in Western Europe will be taxed 27% at the border.

A recent trip to England and France gave me an opportunity to learn a bit about the EC. Most of my inquiries were directed to Britain since I understood no French. EC farm subsidies were being discussed in magazines, TV and the man on the street. Shopkeepers were mostly noncommittal. The farm program of the EC-12 is like our own, but some of the political comment was a bit different.

I asked about the reasoning for giving the farmers such nice treatment. The quick reply: "Look Yank, you Americans have never been hungry." Probably this point alone will justify subsidized farm programs in Western Europe for many years to come. Most British I talked with were supportive, but browsing in the Harrod's Book Store I picked out some negative quotes under the heading of EUROPE AND THE EEC. I am repeating 4 of these as follows:

"The last time Britain went into Europe with any degree of success was on 6 June 1944."
DAILY EXPRESS, 1980

"What Caesar couldn't do, what Charlemagne couldn't do, what Innocent III and Hitler couldn't do, it looks like the doughfaced "burgher wimps of Brussels might finally be able to pull off — the unification of that portion of the earth's surface known — as Europe. What it took a country 10 times its size less than a hundred years to accomplish, armed only with machine guns and a few trillion dollars, it has taken the tribes of Europe almost three Millenia to accomplish."
Tony Hendra, NATIONAL LAMPOON, 1976

"I do not see the EEC as a great love affair. It is more like nine middle-aged couples with failing marriages meeting at a Brussels hotel for group grope."
Kenneth Tynan, 1975

"European Community institutions have produced European beets, butter, cheese, wine and even pigs. But they have not produced Europeans."
Louise Weiss, OBSERVER, 1980

The October 10, 1987 issue of the THE ECONOMIST contained an article — "Yes, we have no mananas." Subject article was written by the magazine's Brussels correspondent. Like the title the article certainly reeks with pessimism. The first paragraph sums up the sorry state of the EC's finances :

"The European Community has been in a permanent budget crisis throughout the 1980's . . . The Community is now flat broke."

The following bit sounds like an American gripe:

" . . . how much should hapless taxpayers be asked to pay in the year ahead to support small farmers in Bavaria, or subsidize cheap exports of butter, beef and barley to Russia?"

The following could be lifted from our own CONGRESSIONAL RECORD;

" . . . the Community can raise a maximum of 35 billion ecus next year (about $39 billion). Its planned outgoings are 41 billion ecus (about $45 billion). . . . a shortfall of 6 billion. . . accumulated deficit of the past is $17 billion."

Raising funds by increasing assessments sounds familiar:

"... value-added tax (VAT) of up to 1.4% on an agreed range of goods and services — could be raised to 1.6% in 1988. . . . planned 1988 expenditure would need a VAT take of 1.7%."

Comparing U.S. and EC-12 Agriculture

The U.S. farm programs date back to 1932. The EC program is 25 years old. The following table compares the size and scope of the agricultural programs as of 1987 (The figure 12 following the EC denotes the number of countries involved. Spain and Portugal joined the Community in 1986 bringing the total to 12 members:

Continued on Page 294

GIBSON . . . Cont. from page 292

In light of this brief discussion relating to our "free trade" with Western Europe, one can safely assume that neither the Administration nor Congress will give any serious consideration to the honey import problem in the foreseeable future. The present price support for honey will do the trick if we can keep it. We can keep it if we work with our congressional delegations by explaining the true value of honey bee pollination to the country.

Item	U.S.	EC-10
Prices & income support	$25.3 billion	$26.2 billion*
Population	235.0 million	320.0 million*
Number of farms, 1984	2.3 million	6.8 million
Average farm size, 1984	438.0 acres	42.0 acres
Wheat yield per acre, 1985	37.5 bushels	83.6 bushels
Corn yield per acre	118.0 bushels	106.9 bushels
Share of farm produce exported, 1985	20.4 percent	20.8 percent

* Includes Spain and Portugal. Other figures cover 10 countries. Souce: ERS, USDA

Please Do This

Familiarize yourself with the term "Economic Externality". This is a term that Economists use regularly. In their jargon it means benefits that accrue to parties other than the buyer or seller. Honey bee pollination is a classic case of an economic externality. This benefit is discussed in a paper written by Doctors Alan Olmstead and Donald Wooten, University of California, Davis. As near as I can determine, this is the first time this term has been used by anyone doing bee research. If the economic externality story about honey bee pollination was understood by your congressman, our problems in Washington would be solved. Please write the California scientists for a copy and then do your thing with your congressional delegation.Δ

Answers to Testing Your Beekeeping Knowledge

1. **False.** Even with a complete cloud cover, the bees can indicate the solar angle of the food source correctly in the wag-tail dance on the vertical comb surface. The forager's internal clock enables them to know the time of day and position of the sun. Bees are also able to perceive ultraviolet radiation from the sun through a complete cloud cover.
2. **True.** The dances of bees indicating a source of propolis, water, or the location of a nesting site, do not differ from the dances of foragers for nectar and pollen.
3. **False.** Even though drones have definite congregation areas that are virtually unchanged from year to year, we do not know what guides the drones in the choice of these areas or how the location of these areas are communicated to younger drones. Drones may produce an odor that helps guide new drones to a congregation area.
4. **True.** The number of foragers dancing in the hive is related to the quantity and richness of the food source. The sweeter the sugar content of the food source, the more vigorous are the dances. In this way the activity of foraging bees from a colony is adjusted to the relative abundance and richness of nectar of various flower species.
5. **True.** The various races of honey bees differ slightly in their indications of distance and direction when performing the wag-tail dance. These racial differences are referred to as dialects of the bee dance language.
6. **True.** When a bee dances on a horizontal surface, the direction of the waggling run points directly to the food source. The dancer maintains the same angle relative to the sun as she held previously during her flight from hive to feeding place.
7. **False.** When a forager dances, the estimated distance indicated to the goal is based on the expenditure of energy rather than the expenditure of time.
8. **True.** Queen substance has been found in the mandibular glands of some laying workers, which indicates that the mandibular glands are capable of producing it.
9. **True.** Newly emerged queens have little queen substance in their mandibular glands but the amount increases until they are about 10 days old. Laying queens are normally more attractive than virgin queens due to the larger amounts of queen substance present.
10. C) Shaking dance
11. B) Buzzing run
12. E) Sickle dance
13. B) Buzzing run
14. F) Jerking dance, (D-VAV = dorso-ventral abdominal vibration)
15. B) Koschevnikov gland
16. A) Tergite glands
17. C) Tarsal glands
18. A) Tergite glands
19. B) Koschevnikov gland
20. C) Tarsal glands

Answers to Extra Point Questions

21. **False.** Dancers are brought to a halt by a loud sound or squeak from the followers. The dancer and the surrounding bees are paralyzed by the squeak. The dancer is then approached immediately for food by the follower that uttered the squeak.
22. **False.** Dancing is somewhat more rapid when environmental temperature is high than when it is low. An increase in hive temperature will also increase the dance tempo slightly.
23. **True.** A headwind on the way to the feeding place acts like an increase in the distance, thus the dance tempo is slower. A tailwind to the food source speeds up the tempo of dancing.
24. **True.** Bees that are exposed to a crosswind on the way to a feeding site compensate for the drift by heading obliquely across the wind. Therefore they see a different solar angle than during direct flight in calm air. In spite of this, the dances point straight toward the goal.

There were a possible 24 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

24-18 Excellent
17-15 Good
14-12 Fair

QUESTIONS?

Q. *You say that swarming can be prevented by replacing combs of brood with empty combs or foundation, but Dr. Jaycox writes that expanding the space available for brood rearing does not reduce swarming significantly. Who's right?*

A. Several readers have pointed out this apparent conflict of views, but in fact they are not in conflict. It is true that swarming is not significantly reduced merely by enlarging the area available for brood rearing — by adding empty combs at the side of the brood nest, for example. What is important is that two or in most cases three combs of brood be removed right from the center of the brood nest, and replaced with empty combs or foundation, prior to the construction of queen cells. A colony will seldom swarm until this deformation of the brood nest has been corrected by filling the new combs with brood.

Q. *Can you stimulate brood rearing by moving empty combs from the outside of the brood chamber to the center? Or would this tend to demoralize the colony? Is there another effective way to stimulate brood rearing?*

David Kesler
Memphis, TN

A. Replacing combs of brood in the center of the brood nest with empty combs is a good way to reduce a swarming impulse, but not, I think, a good way to increase brood rearing. Brood rearing is correlated with, among other things, the flow of nectar into a hive. The best way to stimulate it is, I think, by feeding sugar syrup — which also, however, stimulates early swarming.

Q. *In raising comb honey, should you use a deep hive body as the brood chamber and super over that, or should you use a shallow super for a brood chamber?*

Wayne Emerick
Hyndman, PA

A. I super over one and a half stories, that is, on a hive consisting of one deep hive body and one shallow super. If the bees are crowded down into a single shallow super, and then comb honey supers added over that, then you are likely to get pollen in the supers, even when you use a queen excluder. I have, however, sometimes had good luck supering over a single deep hive body; but a hive that small is difficult to get through the winter.

Q. *Can you advise me on how to prevent swarming? I have two hives for pollinating my fruit trees and am not interested in producing honey.*

Wilbur Nickless
Grant, MI

A. There is no practical way of preventing swarming if one is not interested either in honey production or in increasing his apiary, for every effective swarm prevention measure involves dividing the colony, in one way or another. Bees must not, however, simply be neglected and allowed to cast swarms. The solution is to find a beekeeper who will be glad to tend the bees, harvest the honey, and deal with the swarm problem.

Q. *This winter I cut two hollow bee trees each about six feet long. I now have them standing vertically on bricks. How can I move the bees from the logs into hives?*

Robert Kiebel, Jr.
New Allbany, OH

A. The best way would be to turn the logs upside down, so that the combs are upside down, bore a good-sized hole in the top, and set a standard hive, fitted with combs or foundation and having a hole in the bottom, on top of this. The bees will, over the course of three weeks or so, abandon their inverted combs in the log and move on up into the hive, after which the hive can be set where you want it, with a proper bottom board.

Q. *Workers and drones fly from the hive on cleansing flights to eliminate their waste. How does the queen do it?*

Stephen McDaniel
Baltimore, MD

A. The answer to this is apparently not known, and a matter of deep puzzlement to entomologists. A queen can be confined to a queen cage by herself for weeks, provided worker bees are able to feed her from outside the tiny cage, and it does not become fouled. It is, I believe, an as yet unsolved mystery.

Q. *Is hubam clover a good honey plant, and where does one get the seed?*

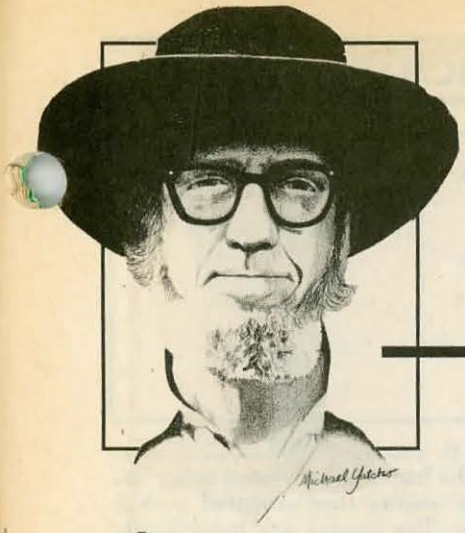
Charles Blackman
Honeoye, NY

A. White sweet clover, of which hubam is a variety, is one of the best honey plants found anywhere. It once, during much of the first half of this century, covered the midwest, but is now found mostly as a roadside weed. Hubam is much larger than the usual white sweet clover and, unlike the latter, it blooms every year rather than every other year. As for source of seed, begin with Agway or any similar agricultural supplier. As in the case of any other honey plant, however, it is well to remember that it does not pay to plant merely as a nectar source.

Questions are welcomed. Please send questions to Dr. Richard Taylor, R.D. 3, Trumansburg, NY 14886. U.S. correspondents: please enclose a stamped, self-addressed envelope for a prompt response. No telephone calls, please.Δ

& ANSWERS!

Richard Taylor



BEE TALK

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

"Commercial comb honey production: 17,000 sections a year!"

A year or so ago I found myself in communication with a beekeeper out in Idaho. When I learned that this gentleman, Mr. Kent Wenkheimer, and his wife Sharon, were producing and marketing *seventeen thousand* sections of comb honey a year, and planning to increase their production, I really sat up and wanted to hear more. They have, in the meantime, filled me in with the details of their operation, through many letters and phone calls, and sent me samples of some of the most delicious comb honey I have ever eaten. I have yet to meet them, but it is clear that these resourceful people are perhaps the ablest beekeepers I have ever come across.

So I'm going to describe how they do it, thinking this might inspire others who are young and strong and smart enough to try new approaches, and who might want to follow their example. I'll say a bit about their background, first of all, then describe in detail their somewhat original methods of comb honey production. Next month I'll describe their highly innovative marketing methods.

Mr. Wenkheimer got his first hive of bees in 1972, and seven years later he had twenty. That was about the time he moved from Spokane to Peck, Idaho, where with his wife he now runs the Mountain Star Honey Company. Today, with about six hundred colonies, devoting themselves entirely to beekeeping, they ship comb honey all over the world, all from their own bees, and all produced by themselves without paid labor. This year they plan to add large-scale pollen production to their operation, devoting about two hundred of their colonies to this, and aiming at a production of between one and two tons.

Mr. Wenkheimer makes all his own wooden equipment except end bars, using mostly scrap lumber from a mill not far away. His method of wiring frames is novel. Instead of running the wire through the holes in the end bars, he inserts three #3 nails in each end bar, bends the points into hooks, and runs a single strand of wire back and forth through these, top to bottom. The wire is embedded with a battery charger into heavy brood foundation. He likes the foundation to be as heavy as he can get, usually about six sheets per pound, as the bees draw this out pretty well even when there is no flow. He doesn't bother making hand holds for the comb honey supers. They are easily picked up without them.

There are three main honey flows in their area, but the Wenkheimers depend on star thistle for their comb honey crop. This comes early in July and continues into August. There is no fall flow at all. Sometimes there is honey from rape, but this is not good for comb honey because it granulates almost instantly, even in the comb. Star thistle, on the other hand, can be kept for two years without granulating — ideal for the comb honey beekeeper. It is also water white, extremely heavy and, as I can attest, utterly delicious.

The Wenkheimers believe in intensive management, getting the very top production from every colony, for they live in an area where honey flows are somewhat few and not always bountiful. Their apiary management amounts to a two-queen system, with automatic requeening of every colony every year, using queens they raise themselves from their best stock.

Here, more precisely, is how they do it.

The comb honey is all in circular sections, produced in eight-frame supers with follower boards on each side. The bees are all in two full-depth hive bodies. In March or early April each colony gets a quarter-pound patty of pollen and terra mixed with honey, then another about ten days later, to stimulate brood production. Then beginning in early May the Wenkheimers split each colony, as follows: Depending on colony strength, four or more combs of brood are removed and the bees shaken off. The queen is left in the bottom story, a queen excluder put over this, and the combs of brood put in the top. The bees from below immediately come up and cover the brood, but the queen, of course, stays below. A day or two later the queen excluder is replaced with a sheet of plywood with a hole in the center, and eight-mesh screen on each side of the hole. That top story is then

immediately removed to another yard, where it replaces the second story of a hive that has been treated in exactly the same way. Removal to another yard is necessary in order to prevent bees from the top story rejoining those below, leaving the top part seriously weakened.

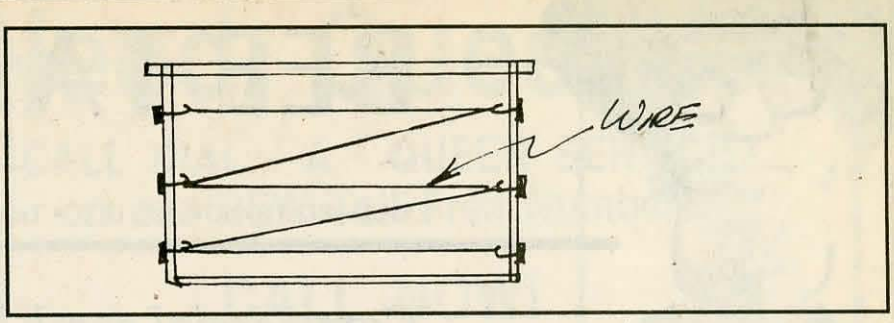
The result of this procedure is that each colony has the queen and a relatively small amount of brood in the bottom story, the bulk of the brood and bees, but no queen, in the upper story, this upper story of each hive having come from a different yard. The upper stories have, so to speak, been moved, round-robin style, from yard to yard.

After two or three days a ripe queen cell is put in each top story. The bees will, of course, have begun their own queen cells up there, but that does not matter, for the ripe cell they get hatches out well before any others and the new queen destroys those.

The Wenkheimers believe it is essential to raise their own queens, for it would be prohibitively costly to requeen every colony each year. Moreover, it gives them some control of quality in their stock. In 1985 they had one queen which performed so spectacularly that they used her as their breeder queen for several years and are convinced that their stock was significantly improved. Their method of queen rearing is standard, involving grafting larvae into cell cups, but of course the queens are introduced as cells, rather than as mated queens, greatly simplifying things.

Now each stand holds, in effect, two colonies, each in a single brood chamber, one on top of the other, the top one containing a ripe queen cell or, soon thereafter, a newly-mated queen.

By about June 1, when both halves have begun to build up to good colony strength, they are united by



replacing the plywood sheet with a newspaper and a queen excluder. This combined two-story colony will then usually retain both queens right into or through the star thistle honey flow, which begins in early July, after which one of the queens, presumably the older one, will be displaced by the younger ones.

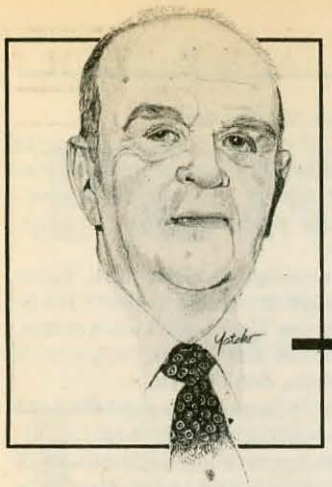
Alternatively, the Wenkheimers sometimes super each part separately with extracting supers, keeping them separated by the plywood divider, and then unite them, without any newspaper or excluder, for the star thistle flow. When this procedure is followed the extracting supers are set on top of the comb honey supers that now go on to catch the star thistle flow. They find that the comb honey gets capped over better when there is honey in supers above it.

The honey is harvested using bee escape boards supplemented with a blower. The supers are individually sacked, that is, put individually into large plastic bags, honey and all, and these are put, twenty at a time, into a large freezer, for about two days, to prevent wax moth damage. The supers, still in their plastic bags, are then stacked twelve to a pile, and the comb honey taken from them as needed. The Wenkheimers, by this system, are able to remove, pack, and label the comb honey, ready for market, at a rate of about twenty-six supers per day; but until they need it, it stays stacked, in the supers, protected by the plastic bags.

This is a truly intensive system, orderly and simple, but not, of course, easy. The very maximum of production is gotten from every colony, of precisely the kind of honey that is wanted, which is, star thistle comb honey in round sections, beautifully capped, deliciously flavored, and safe from granulation for upwards of two years.

With this kind of specialized production the Wenkheimers need equally ingenious and specialized marketing methods. They have them, and I'm going to describe them next month .Δ

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



KOOVER'S KORNER

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

"God helps those who help themselves"

I am a great believer in that saying. I was an immigrant boy with $118.20 in his pocket and the good Lord has been wonderfully kind to me. That was 65 years ago. God Bless America!

The Asian bee, *Apis cerena,* knows how to scrape the Varroa mite off its body. That suits me just fine. They also don't produce much honey. That's O.K. too, just so I don't have to worry about having my bees killed unless I spend time and money keeping them off my bees. It's a big order to kill the mites and not my bees.

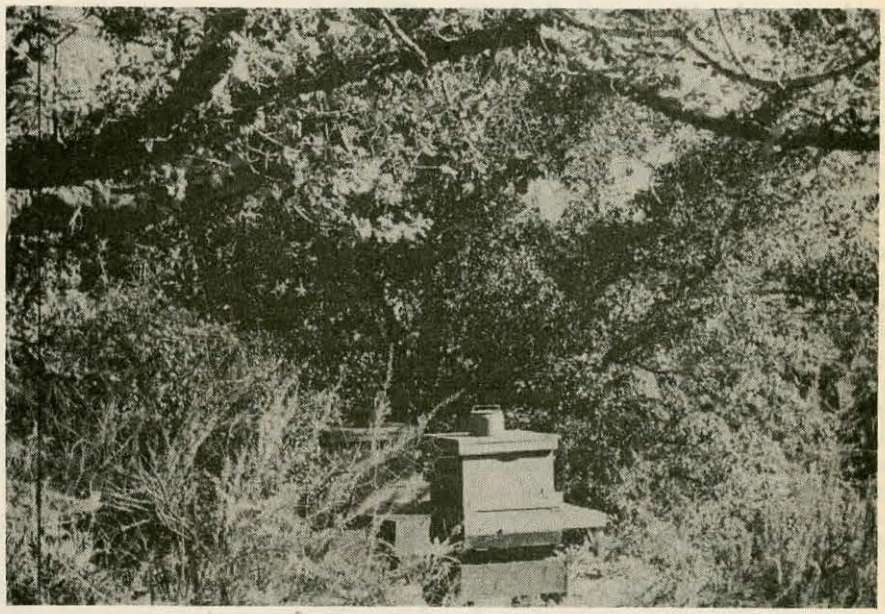
My entomologist friend in the department of Agriculture of the State of Hawaii is throwing cold water on my thoughts. But I maintain, "Where there is a will there is a way". Now here is a project I am 100% in favor of. I am stirring up resentment amongst the scientists and they will be saying about my idea — Fools wade in where angels fear to tread!

My entomologist friend tells me that the introduction of the European bee, *Apis mellifera* into China is the reason China is producing such large quantities of honey that has robbed us of our export markets for our surplus honey. If that is so, how come the Varroa mites, in China, where they are supposed to have originated, have not killed off the introduced European bees?

I expect the scientists to tell you that I am all wrong, that I don't know what I'm talking about, and so on. That too is all right with me. But I want my bees to clean themselves of their mites. Any other way is going to be a pain in the neck to me. And costly. They, the scientists brought the African bee to us. Now I want them to bring in *Apis cerena* and see what they can so with them.

I getting old, but I'm not ready to quit yet. We will lick that varroa problem.

My way — I hope!Δ



Not everyone can find a location like this. At least we can provide our bees with adequate living quarters. In fact, we owe it to them and it also pays off in large surplus crops of honey.

THE INNER COVER . . . Continued from Page 251.

chemical companies could develop new ones. Tank mixes of 2 or 3 different chemicals applied at the same time became common, as did more and more spray applications during a season. It was a joke alright, but only the chemical companies and the pests were laughing.

Then the other shoe fell.

People became concerned about chemical residues on their food. Some chemicals were shown to cause cancer, birth defects, and other human maladies. The government stepped in and said any new (and old) chemicals must be safe. It became the responsibility of the chemical companies to prove their products were not only effective, but also that they were safe. This burden added considerable cost to products and the price of doing business increased significantly.

Also, it became mandatory for applicators to be trained in the art of pesticide application, so (in theory) misuse and abuse problems declined. Researchers began to show that any crop could sustain a certain population of pests without economic loss. Further, that if you knew where and when to look, you could tell exactly when to apply a spray so it would give the greatest control, at the least cost and with minimal chance of nasty side effects. These practices, labeled IPM, became politically popular, but the end result was that growers, chemical companies, consumers and government agencies matured a bit. And, for the most part, they now express the belief that more is not necessarily better and in some cases none is better.

Interestingly, chemical companies have become even more concerned since overuse of any particular product (and the rapid pest resistance that develops) tends to shorten the useful (read *financial*) life of a product. Moderation can be profitable — safe — and effective.

The lesson, or the moral if you prefer, is that if you start messing around with Mother Nature, She will push back — harder than you probably realize. Also, Uncle Sam manages to keep his nose in everybody's business, and don't *ever* take that fact for granted.

The technology exists, right now, that can measure the amount of pesticide in a food product in 'parts per billion'. So you're not going to get away with much in the way of contamination anymore.

The Feds also keep an eye on all the pesticides sold in this country. It is a complex, and not too efficient, system. Are you willing to bet they don't know what they're doing?

And, of course, there is the mite itself. History has shown (and I've just told you) that if a pesticide is overused, those pests tend to get even, *tenfold*.

The message is clear here, folks: Don't misuse or abuse any pesticide in your beehives. If you don't have mites, for gosh sakes don't treat for them. If it's not broke, don't fix it.

If you do have mites, first find out if you can control them without chemicals (there *are* mechanical methods of reducing populations to less than economic levels). If you can't control them without using chemicals, choose your weapon carefully, read the label, read it again, then follow the instructions to the letter! Don't apply any chemical for shorter or longer periods than called for, nor use more or less than stated on the label. The label is the law — remember that. Don't contaminate your crop, because somewhere down the line, somebody is going to get caught and then we're all suspect — guilt by association will last a long time.

If you don't overreact, and do things correctly the first time, we can avoid the mess those apple growers went through. But if you screw up — the result will be expensive, and cause us all far more harm than varroa *ever* thought of.Δ

EAS Seeks Nomination

The Eastern Apicultural Society is once again seeking nominations for the annual Hambleton Award. This award is given each year to individuals who have contributed outstanding research in the field of Apiculture. Send nominations to Dr. Eric Erickson, Carl Hayden Bee Research Center, 2000 E. Allen Road, Tucson, AZ 85719.

Quarantine Starts

APRIL 6, 1988. Charles Jackson, Assistant Operations Officer for APHIS announced today that the USDA has signed into effect a Federal Quarantine for the honey bee mite *Varroa jacobsoni*. With this action, movement of bees from states known to be infected with varroa mite is prohibited until colonies have been tested and found apparently free of the mite.

Testing consists of using an Apistan® Strip and a DeWill Collecting Board.

If a colony is found infested, it must be treated with a registered chemical for the time specified on the label. After that, it will be retested and if found clean, can be moved.

A nationwide survey will start soon as part of this program. The survey will attempt to test 5% of all apiaries in a state ***with 10 colonies or more.*** This survey will better define those areas infested.

In a related incident, South Carolina has been found to be infested and added to the list of states already known. It is not known to what extent this infestation has occurred, but we will keep you informed as we find out more.

Hint of the Month

Almost every recipe calls for salt. However, a number of people must restrict their daily salt intake. Others are reducing the amount of salt consumed. What about honey recipes calling for salt? Fortunately, honey contributes a flavor and richness that sugar does not. Sugar is simply sweet. Therefore, in recipes that use honey, salt can be omitted without endangering the overall flavor. Spices, chocolate, nuts and raisins have quite a distinctive flavor of their own. Recipes containing these ingredients do not need additional salt. The spice rack may contain flavored salts, such as celery, onion and garlic salts. Use of these products can be avoided by substituting ground celery seed, onion and garlic powder. It is more economical to use these anyway, since you will not be paying a premium price for salt.

FUNNY BEESNESS

ROGER WELSH • Heartland Heritage • Rural Route • Dannebrog, NE 68831-0160

It seems to me as I sit on my front porch, enjoying a nice glass of golden mead, that it just might be the right time for me to tell you one of my favorite bee stories, one replete with the extremes of human cruelty and human compassion.

I take the tale from my book *CATFISH AT THE PUMP* and I use it here with my own kind permission. I'm that kind of guy.

The story was collected by the Federal Writers Project in the late 1930's and is on file at the Nebraska State Historical Society.

My neighbor Tom Brown came in just as I was finishing up my breakfast of hot biscuits and honey. Tom was helping us build a fence over on the south forty and it just happened that every morning when he came to ride over to the fence with us that I was eating biscuits and honey. So Tom wanted to know how come I had hot biscuits and honey every morning, so I told him how it happened.

We once had several hives of bees. As there wasn't much fruit in that section of the country and transportation facilities were mostly lacking, there was a big demand for honey. For some reason or other the women folks in the neighborhood took a great notion for making hot biscuits and this increased honey sales.

Everything was going fine till the bees took a notion to swarm. Sometimes a flock of bees would fly for miles trying to find a new home. Well, the bees would settle in some neighbor's corn crib or a scrub tree that had survived the wind and drouth. The neighbors were mostly honest and when they discovered the bees they would notify me when they saw me and I would go and get the swarm and bring the bees home.

One day I went to Ike Jones's to get a swarm of bees. Ike had a mean youngster about fourteen years old. Tying two cats together by the tails and throwing them over a clothesline to watch them fight was his idea of fun.

When I went into the house to ask where the swarm of bees was, there sat that tarnashun kid at the table watching a bee limp away from him and laughing to beat anything. I asked him what he was doing and he said, "I'll teach that bee not to try to sting me."

Then he showed me the bee's stinger laying there. He had held the bee and cut off its stinger. The bee had kicked so hard while the boy was cutting off her stinger that she hurt her leg. While we were talking the boy gave the bee a push with a toothpick and the bee fell down. She couldn't walk no more. I got pretty mad, especially when I seen that was my pet bee Phoebe.

I picked her up and she fainted away right there in my hand. I examined her leg and found that she had a fractured tibia. I commenced to cuss that ornery kid and when I was just going good his father came in and said, "Say, how do you know that's your bee, anyway?"

Well, that did make me mad, to think I didn't know my favorite bee and besides we just got through marking them on the left hip with my initials in red paint. Well, I just pointed to my initials on Phoebe's hip and Ike had nothing to say. I wrapped Phoebe up in my handkerchief, put her in my pocket, went out, and drove the rest of those bees home.

When I got home I found that besides having a broken leg, Phoebe's knee cap was out of place. I doctored her and in about three weeks she was as good as new.

Phoebe was so grateful that ever since then, every morning, she comes buzzing in just as the hot biscuits are coming out of the oven and deposits a hunk of honey on my plate about as big as a walnut.

A story like that get's you right here, doesn't it?!

Well, get busy and send along your favorite stories, lies, anecdotes, bumperstingers, or blank checks to me here at Primrose Farm, Dannebrog NE 68831, and in return, I'll send the writer of the best entry I use in the next edition of Funny Beesness a copy of my book *SHINGLING THE FOG*, which will convince you that you shouldn't believe everything you read, and a crutch for your favorite bee in the event that she runs into some mean little kid.Δ

NEWS...

California State Beekeeper's Association Awards Dr. Harry Laidlaw for Distinguished Service

Dr. Harry Laidlaw, professor emeritus at University of California, Davis, was presented the Distinguished Service Award at the California State Beekeeper's Annual Convention in San Luis Obispo. This was given in recognition of Dr. Laidlaw's contributions and professional talents to help further the goals of the beekeeping industry.

Dr. Laidlaw started his beekeeping career at the age of 5, working with his grandfather, Charles Quinn. They shared a great interest in queen breeding and saw the need for a method of controlled mating. Laidlaw pursued this goal and went on to study honey bee reproduction and played a major role in developing the technique of instrumental insemination. He completed his B.Sc. and Masters degree at Louisiana State University and his PhD at University of Wisconsin.

After completion of his degrees, Laidlaw worked at the USDA Madison Bee Lab., and taught at a college in Indiana. He also served as the State Apiarist for Alabama. His career was briefly interrupted when he was inducted into the Army. In 1947, Dr. Laidlaw accepted a position at the University of California, Davis where he is a familiar face and continues to be very active despite his retirement.

Dr. Laidlaw's contributions to apiculture research have opened many new doors and furthered our understanding of honey bee genetics and practical breeding methods for stock improvement and maintenance for beekeepers and scientists alike. He has written numerous scientific papers, popular articles and several books, with another on the way. On an international level, he has served as a valuable teacher of instrumental insemination and as a consultant on bee breeding.

An inspiration to students and beekeepers alike, Dr. Laidlaw is an excellent teacher, always making himself available for a discussion, theoretical in nature or concerning practical beekeeping. The California beekeepers are proud to have such a distinguished and internationally renowned researcher as their ally.

Apiculture Awareness

The following is a letter received recently from Dr. James E. Tew, PhD, National Program Leader, Apiculture, USDA Extension Service:

In recent beekeeping articles, the reactivation of the USDA Extension Service Apiculture position has been announced. This is a similar position filled by Dr. Basil Furgala, University of Minnesota, a few years ago. Dr. Furgala did an admirable job and, upon his departure, left project guidelines that were needed and well-defined. The concern expressed by the beekeeping industry in areas of Africanized bees, Varroa mites and other beekeeping problems was the incentive for funding the position again. The announcement of the program represents a great effort by the national beekeeping organizations and a general concern at the Federal level for the overall health of US beekeeping. It should be noted that excellent support has been offered by the USDA Extension Service during a time of declining federal support for new projects.

For the first year, approximately 10 projects have been defined. A few of these projects are predictable such as attending national meetings and publishing beekeeping information for the general public and for the US beekeeping industry. In other areas, I am expected to develop communication procedures for the Extension Service and develop basic educational materials for distribution through various state extension services.

This is a big job, with the potential to help the US beekeeping industry through the state extension system. I look forward to the challenge and give my best effort.

Lyng Names Public Member to National Honey Board

WASHINGTON. Secretary of Agriculture Richard E. Lyng has named Dr. Tucker Hart Adams of Colorado Springs, CO, as the public member of the National Honey Promotion Board.

Lyng also named three other members and four alternates to the board. Adams will represent people outside the honey industry on a board otherwise representing that industry's various segments.

Adams is vice president and chief economist of the United Banks of Colorado Inc., Denver. She is president of the University of Colorado Alumni Association, serves on the boards of the Women's Forum of Colorado and the Colorado Health Facilities Authority, and is a former director of the National Association of Business Economists.

The National Honey Board administers provisions of the National Honey Research, Promotion, and Consumer Information Order authorizing development of programs to improve the position of honey in the marketplace. Assessments on honey producers, producer/packers, and importers finance the program.

USDA Changes Honey Order Refund Application Dates

On March 11, the U.S. Department of Agriculture announced new deadlines of April 30 and October 31 for honey producers, producer/packers, and importers to apply for refunds fo the assessments they pay to support programs of the National Honey Board.

The previous deadlines were May 31 for the June refund period and Nov. 30 for the December period.

J. Patrick Boyle, administrator of USDA's Agricultural Marketing Service said the National Honey Board recommended the change to the USDA in order to allow the board's office enough time to verify that the assessments were paid, process the applications, and make the refund payments within the prescribed periods.

The federal honey order stipulates that producers, producer/packers, and importers of honey pay an assessment of one cent per pound to the National Honey Board to support national advertising and promotion programs. Those who do not wish to invest in honey promotion may receive refunds during two refund periods each year.

During the Board's first year, approximately 1 percent of industry members received refunds amounting to about 5.5% of funds collected, NHB Manager Dan Hall, said.

The change was published as a proposed rule in the Nov. 4,1987, Federal Register with a 30-day comment period. The final rule was published in the March 14 Federal Register. For additional information, contact Perry R. Letson, Marketing Order Administration Branch, Fruit and Vegetable Division, AMS, USDA, Rm. 2525-S, P. O. Box 96456, Washington, DC 20090-6456, (202) 447-4140 or Bruce Boynton, National Honey Board, 9595 Nelson Road, Box C, Longmont, CO 80501, (303) 776-2337.

Don't Get Used To Higher Farm Income

COLUMBUS, OH. There's a reason for the higher income farmers have had recently — Uncle Sam is doing them a favor.

And while the optimism created by more money is great for the agricultural industry, an agricultural economist at Ohio State University says people shouldn't get too carried away.

"This continuing feeling that things have turned around in agriculture worries me," Allan E. Lines says. "So far, farmers are doing the smart thing and not taking on more debt. I just hope we don't get back to the 1970's feeling that high income is normal."

Lines says the reasons for the good times in the 1970's and 1980's are totally different.

"The boom of the 1970's came from high market prices for grain and other crops. Current high income is more the result of high government payments, lower production costs and higher prices. All are abnormal," Lines says, "and farmers shouldn't do their long-range planning based on the current economy.

"I'm not sure farmers understand that this high level of income has been created for them by Uncle Sam for one purpose: to help solve some of the problems of the early 1980's," he says. "It is not intended to last. It's a window of economic opportunity, a chance to get your house in order."

Federal support for agriculture will decline in the next several years as the government moves toward free trade. Government programs currently make up about half of farmers' income. Lines says if farmers don't prepare themselves, they will be left out in the cold in a free trade market. Producers with the lowest costs will survive.

Consider lower production costs a bonus, Lines says. But save that bonus or use it to pay off debts and start building a nest egg for tougher times. He says that the importance of maintaining the lowest costs possible will increase as government supports decline and the farm economy tightens up. He also suggests restructuring the farm business, if necessary, to make it more efficient and less indebted.

"I worry that as we move into 1989 and agriculture is still in fairly good shape, farmers will start to think these good times are normal and get careless with their spending," Lines says. "That's about the worst thing they could do given what we expect to happen to support programs, input costs and prices."

Australian Bees for Canada

MELBOURNE. A Western Australian company will export more than 100 million bees, worth about $A600,000 (Approx. $US426,000) to help restock hives in Canada. the company, John L. Guilfoyle, Western Australia, said the shipments by air in April to coincide with the Canadian spring, might be the first of regular annual deliveries to Canada.

Mr. Guilfoyle, a beekeeping equipment maker acting on behalf of 23 Australian bee suppliers, said the export order from a Saskatchewan distributor comprised of 5,000 packages, each containing 20,000 honey bees and two queen bees. He said Canadian beekeepers traditionally restocked hives with bees bred in the southern United States, but a disease outbreak in some American states had forced them to look elsewhere for supplies. Western Australia was relatively free of bee diseases and it's bees were of high quality, being vigorous, long-lived and well-fed.

... & Events

Your Next Meeting Notice should be here. Why isn't it? Send in your information now, while you're thinking about it. Allow a 2 month lead time — 3 is even better.

☆ ARIZONA ☆

SO. ARIZONA BEEKEEPERS ELECT THEIR FIRST HONEY QUEEN. Teresa Street, 17 was recently crowned the Southern Arizona Beekeepers Association Honey Queen.

Teresa is attending Amphi High School in Tucson, AZ and is Junior Vice President of her FFA Chapter. Her major interests are in agriculture. She currently raises steers, hogs, rab-

bits and now bees. She helps with community projects such as BOAC, and raising pigs for resale for handicapped fund raising. She is also active in her church youth group. She will represent our association in December, 1988, trying to become the first Arizona State Honey Queen for the year 1989.

☆ CALIFORNIA ☆

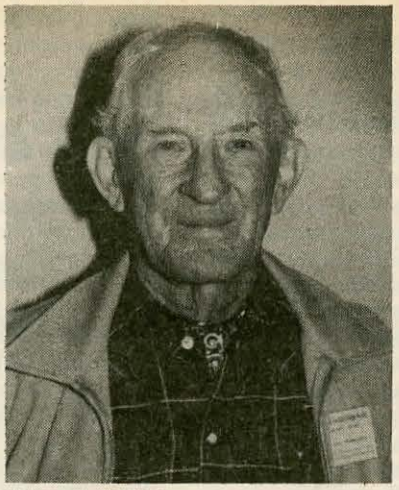
INSTRUMENTAL INSEMINATION TRAINING and Practical Bee Breeding Course. Designed for the serious beekeeper who wants to become familiar with the technique of instrumental insemination and plans to establish, or is operating a breeding program. The class is divided into two sections to provide the information necessary to develop and maintain a breeding program, and also to provide individual instruction in the technique of instrumental insemination.

- SECTION 1. An intense one day seminar includes: basic bee genetics, various breeding systems with emphasis on the Page-Laidlaw Closed Population Breeding Program, colony selection methods and evaluation procedures, how to establish a selection index, pre- and post-insemination of queens, equipment set-up and adjustment, and a detailed, step-by-step slide show of instrumental insemination.
- SECTION 2. The technique of instrumental insemination is precise. Consequently, individual class time will be arranged with each student at their convenience. This allows us to provide the detailed, individual, hands-on instruction necessary for you to become comfortable with the technique. Use of standard and large capacity syringes, glass tips, plastic tips, and the short term storage of semen will be covered.

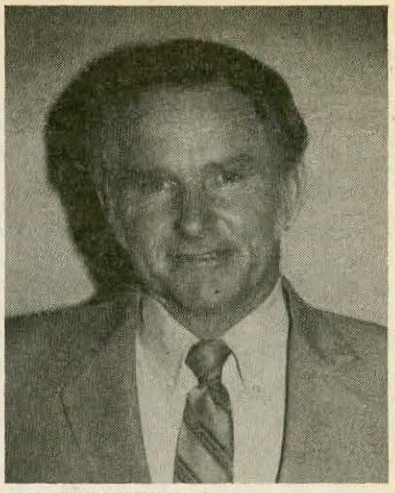
Seminar class dates are June 18 and July 16, 1988. Fees for complete class including seminar and laboratory training is $200.00. Seminar only is $75.00. For more information, contact the instructors; Susan Cobey and Timothy Lawrence, at Vaca Valley Apiaries, 6745 Bucktown Lane, Vacaville, CA 95688. (707) 447-6723.

•

An Honorary Membership was bestowed on **Scott Twist** of San Francisco at the California State Beekeepers 98th. Annual Convention held in San Luis Obispo, California. Scott, a Charter Member of the San Mateo Beekeepers Guild, has been a beekeeper for 66 years.



SCOTT TWIST



FRANK WALTERS

BRUCE BEEKMAN

BERT WALTERS

An Honorary Membership was also awarded to **Frank Walters** of Waterford at the same meeting. Frank was first president of the Delta Bee Club and has been an active beekeepers for 56 years.

Bruce Beekman of Turlock was the Beekeeper of the year for 1987. He served as the state association president in 1981, Chairman of the California Apiary Board and California Honey Advisory Board, and the California representative of the newly formed National Honey Board. He had also been awarded the "Young Beekeeper of 1979".

Bert Walters of Turlock was selected as the "Young Beekeeper for 1987". This award is given to an outstanding beekeeper who has less than ten years in the beekeeping industry. Bert has been active in the Delta Bee Club and has served twice as their president.

STEVE TABER is again offering 2 classes this summer.

•July 16, 17 and 18 will be on Intermediate Beekeeping, including location and ID of parasitic mites, bee diseases, queen manipulation and basic bee genetics. Included are field trips and guest lectures. Cost is $200.00 with a limit of 35 participants.

•July 21, 22, 23 and 24, a course on Artificial Insemination will be offered. This will include semen collection and injection, and care of virgins and drones. Evening lectures will cover bee genetics and various breeding programs. Cost of this course is $300.00 with a limit of 16 participants.

Noon meals and a banquet are included in both classes. Speakers include Steve Taber, Tom Parisian and other experts in the field of Beekeeping and AI. For more information contact Honey Bee Genetics, P. O. Box 1672, Vacaville, CA 95696. (707) 449-0440.

Participants from developing countries will be charged $150.00 and $250.00 respectively for these classes. Cost for meals for an accompanying person who is not a participant is $35.00.

☆ GEORGIA ☆

THE ANNUAL BEEKEEPERS SHORT COURSE for beginners and more experienced beekeepers will be held on June 11, 1988, at the University of Georgia, Athens, GA. The meeting, sponsored by the Department of Entomology and the Georgia Beekeepers Association, runs from 8:30 a.m. to 5:00 p.m. Registration will start at 7:30 in the Biological Sciences Building, Auditorium 404E. 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, GA.

Topics and demonstrations will include honey bee life cycles and activities, queen rearing and colony division, management for honey production, honey house operation, recognition of bee diseases and parasitic mites, prevention and control, and package bee installation. 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 9, 1988.

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

☆ NEW JERSEY ☆

Instructors with more than a century of combined beekeeping experience will present a three-day short course in beekeeping at Cook College on June 28-30, 1988.

The class combines lectures and slide presentations with actual bee handling exercises. Topics include the life history of the honey bee; diseases and enemies of bees as well as colony manipulation, apiary location and how to obtain bees. The instructors also will demonstrate swarm prevention and swarm control practices. Other topics include honey removal and processing, mead making and candle making.

The program is designed for beekeepers as well as anyone interested in learning more about the field, including science teachers and high school students. The faculty features Dr. Robert Berthhold, Associate Dean of Science at Delaware Valley College; Jack Matthenius, State Apiarist with the New Jersey Department of Agriculture; Radclyffe Roberts, Associate Professor of Entomology at Cook College; and Frank Wojcik, Apiculturist at Cook College.

The course is sponsored by Cook College Office of Continuing Professional education in cooperation with the New Jersey Department of Agriculture. Registration fee of $40 includes course materials and coffee and danish each morning. For a brochure or more information, please contact the Office of Continuing Professional Education, Cook College, Box 231, New Brunswick, NJ 08903. (201) 932-9271.

☆ OHIO ☆

ATI WORKSHOPS. For the past few years, the **Agricultural Technical Institute of the Ohio State University** has offered summer short courses. These courses are actually compacted regular classes, they are intensive and comprehensive. We realize that many beekeepers have problems finding time to attend summer programs, therefore, we are always searching for the right "mix" of course content and dates. This summer, we are trying the long weekend approach.

- On May 13, 14 and 15, 1988, we will offer introductory beekeeping. We gave this course a break during the past few years and feel that it is time to offer it again.
- On June 10, 11 and 12, 1988, we are offering a new program — Contemporary Issues in Beekeeping. On June 10, a full day of Africanized Beekeeping — the latest information. On June 11, Varroa Mites — What They Are and How Can They Be Controlled. On June 12, a discussion of Tracheal Mites during morning hours and a short discussion of Honey Marketing during early afternoon hours.
- The VIII International Beekeeping Seminar will be presented July 18-29, 1988. As in past years, this is a symposium on the International Aspects of Beekeeping. During the past years, approximately 200 participants have participated from 30 countries. We anticipate another successful year.

Additional information on all courses are available from: The Office of Conferences, Ms. Gail Miller, The Agricultural Technical Institute, Wooster, OH 44691. (216) 345-8336.

If we can be of any assistance, feel free to contact us.

☆ WEST VIRGINIA ☆

The West Virginia Beekeepers Association will hold their 1988 spring meeting on Saturday, May 7, at the Bluestone Conference Center at Bluestone Lake (Southern West Virginia). The major topics of the program include: Varroa mite identification and detection, the relationship of black bear habitat and behavior to beekeeping, and current methods for the control of bear damage to apiaries.

The meeting is scheduled for 11:00 a.m through 3:00 p.m. Anyone wishing to attend must pre-register three weeks prior to the meeting. For more information, contact Earl P. Cochran, President, Box 1273, Shady Spring, WV 25918 or call (304) 763-3273.

☆ TENNESSEE ☆

There will be a meeting for beekeepers, sponsored by **Beekeepers of Tennessee** on Friday and Saturday, May 13-14, 1988. The topic will be, "Preparing for a New Era in Beekeeping".

Friday, May 13

8:30 Call to Order, Howard Kerr, President
9:00 The Importance of Honey bees to TN Agriculture. Dr. Alvin D. Rutledge, U. of TN
9:30 Honey Bee Impacts on Wildflowers and Forest Plants. Dr. Fred Norris, Botanist (Ret.), U. of TN
10:15 Tracheal Mites in the SE. Dr. Frank Eischen, GA
10:45 Germany's Experience with Varroa. Erich Kaiser, Bee Master, Federal Republic of Germany
11:00 A Progress Report on Africanized Honey Bees in Mexico. Dr. Orley Taylor, U. of KS
1:30 USDA Honey Bee Research. Dr. Richard Helmich, USDA
2:00 Regulatory Policy Options and Impacts on the Beekeeping Industry. Reg. Wilbanks, President American Beekeeping Federation
2:30 Economics of TN Beekeeping. Dwight Tew, Manager, American Bee Supply
3:30 Workshops: Concurrent, 40 minutes each.
Room A: Varroa Mite Workshop
Room B: ASCS Honey Loan Program, NHB
4:20 Room A: Home Grown Queens
Room B: Planning a Meeting
7:00 Beekeepers of Tennessee Social. Beekeeping in Germany, Erich Kaiser; An Inspector Visits Venezuela, W. Gray Haun, TDA; Report to Members

Saturday, May 14

8:30 Call to Order
8:45 Advanced Beekeeping Technology, Howard Kerr
9:15 Thermodynamic Model of a Worker Bee, Joe B. Dooley, Martin Marietta Energy Systems, Inc.
9:45 Optimizing Honey Bee Populations for Maximum Production, W. Joe Campbell, President
10:30 Honey Bee Mating Studies: Observations and Implication. Dr. Orley Taylor
11:00 Management Techniques Used With AHB in Venezuela, Dr. Richard Helmich
11:30 A Proposed Master Plan for TN Beekeeping, B/T Executive Committee
12:00 Luncheon Banquet. Ticket included in Registration. Proposed Guest Speakers: Tennessee State Government, Gov. Ned McWherter; The Universities, Dr. Pete Gossett Dean, TN Institute of Agriculture; Tennessee Farm Bureau, Mr. Joe Hawkins, President, TN Farm Bureau; The Media, Mr. Frank Munger, Reporter, Knoxville News Scentinel
2:00 Questions and Comments from Attendees
3:30 Workshops: Concurrent, 40 minutes each.
Room A: Tracheal Mite Workshop
Room B: Building Beekeeping Equipment
4:20 Room A: Removing Colonies from Houses
Room B: Processing & Packing Honey Small/Large Scale

For more information, contact: Howard T. Kerr, Rt. 11, Box 7, Maryville, TN 37801, Home phone (615) 982-6750 or Office: (615) 574-7134. Registration fees which include Banquet Tickets for: Members of Beekeepers of Tennessee, Individual $18.00, Family $26.00; Non-members, Individual $25.00, Family $35.00.

☆ OBITUARIES ☆

ELMER J. STEINER. Elmer J. Steiner, 80, of 276 County Road 220, Van Buren, OH, recently passed away.

He was born March 2, 1907, in Kenton, to William F. and Effie (Cornish) Steiner. He married Emeline Kempher in 1935, and she died in 1962. He later married Marilyn L. Bowsher, and she survives.

Also surviving are two daughters, Mrs. James (Beverly) Castanien, Strongsville; Mrs. Bradley (Rosanna) Drake, Findlay; a son, Dennis K. of Findlay; a sister, Mrs. June Letha Ahrens, Lake Elsinore, CA; and five grandchildren.

Mr. Steiner was a school teacher for 13 years and also a storekeeper. He started farming in 1950 and was a well-known beekeeper in northwest Ohio for 67 years. He attended Marseilles High School and Ohio Northern and Bowling Green State Universities.

GERALD E. MACK. Gerald E. Mack, 61, Rt. 2, Reedsville, WI, recently passed away.

He was born January 27, 1927 in the town of Maple Grove, to Ida (Sammann) Mack and the late Otto Mack. He married Henrietta Schnick on April 11, 1953 in Green Bay.

Mr. Mack was a graduate of Reedsville High School, Class of 1945. He farmed in the town of Maple Grove his entire life and was also employed as a welder at Burger Boat and Manitowoc Shipbuilding.

He was a member of Faith United Methodist Church, Brillion; the Manitowoc County Beekeepers, Brown County Beekeepers, and the Local, State and National Holstein Associations.

Survivors include his wife, Henrietta; his mother, Ida Mack, Reedsville; and one son, Steven Mack, Reedsville.

☆ Classified Corner ☆

Classified rates: 55¢ 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. 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 with payment to: The A.I. Root Co., Attention: Cyndi Stephens, Class. Ad. Mgr., P. O. Box 706, Medina, Ohio 44258-0706. For more information call (216) 725-6677, ext. 213.

WANTED

PROPOLIS USA, Route 8, Hayward, WI 54843 is buying hive scrapings and propolis. New suppliers please send 5-10# sample. Paying $2.00 - $6.00 per pound plus freight. Call (715) 634-4274. (TF)

WANTED: TO CONTACT PERSON or company who has contacts with Commercial Beekeeping industry in Canada to undertake the sale and distribution of large volumes of top quality Queen Bees and packages from Australia. Mr. John Guilfoyle will be in Canada Mid to late May. Please contact John L. Guilfoyle Pty Ltd., P. O. Box 18, Darra, Queensland, 4076, Australia. Ph: (07) 3753677. Telex: AA145000. (7/88)

ROUND COMB HONEY. U. S. Fancy, Florida Honey. Quote price. W. Lohrey, 107 E. Lake Drive, Lehigh Acres, FL 33936. (5/88)

FOR SALE

THIS IS THE ONE. Top operation. 1000± two story 10 frame full depth colonies on Meyer style four way pallets. Extra supers, excellent extracting equipment, 500 five frame nucs. (805) 525-6194. (5/88)

100 COLONIES FOR SALE. 2 story $50.00, 3 story $65.00 each. Strong and heavy. Good for making nucs. Tom Doughty (619) 469-3501. (6/88)

30 BEE COLONIES with two and three story hives. Rocsus Seitz, 3535 Pinewood Road, Rochester, MN 55904 (507) 289-5904. (6/88)

SWINGER 2500 ARTICULATING Fork Lift. Four Wheel Drive, 14' Mast. 2500 lb. capacity. Pyle Apiaries, Inc., Middlebourne, WV (304) 758-4479. (5/88)

DUE TO SICKNESS, must sell complete beekeeping business. 4 x 4 pickup, uncapping machine, 24-frame extractor, sump tank and honey pump. 250 colonies in excellent condition. Much miscellaneous. Best offer. Gale Hurd, 3762 Summit Road, Ravenna, OH 44266. (216) 296-3789 (5/88)

10 HIVES, plus 40 deeps, 10 shallows, small extractor (in excellent condition). Miscellaneous equipment. Michigan thumb. Best offer. Don (313) 886-9557. (5/88)

20 STRONG HIVES. 2 Story, 10 Frames, Winter Hardy, Medicated. $55.00 each. 30 Frame Woodman Extractor with Wood Stand, $200.00. Central Illinois, (309) 963-4195. (5/88)

HOBBYIST HAS QUIT! For Sale: Root Cowan 2 frame reversible extractor, along with related extracting equipment (electric knife, strainers, etc.) $100.00 Cash. (419) 485-3131. (5/88)

28 COLONIES, ALSO SOME eight and ten frame supers, covers and 1,000 gallon stainless steel tank. John Seitz, Canastota, NY 13032, (315) 684-9069. (5/88)

HONEY DRUMS, excellent condition. Knoefler Honey Farms, mile marker 96, Hwy. 83, North on Bismark, North Dakota. (702) 258-2408. (5/88)

ALL EQUIPMENT AND 120 hives. All 4-story and in excellent condition. $9,000. Houston, Texas (713) 669-1735 (5/88)

BEE BUSINESS. 500 + stands. Good bee location. All the latest equipment. Best offer. Call "Red" after 6 p.m. (602) 896-2262. Serious inquiries only. (7/88)

50 COLONIES. ALL EQUIPMENT in excellent condition. Purchased New. Bees clean, good locations. SE Michigan. 2-4 standard hive bodies high. MUST SELL. First $50.00 each or best offer. All or part. Days (313) 234-0275; Nights (313) 798-3215, Ask for Stan. (6/88)

BEEKEEPING SUPPLIES - 1988 Catalog - FREE. New Product: Honey Stix - Information Available. Toll Free No. 1-800-325-1046. Glorybee, P. O. Box 2744, 120 N. Seneca Rd., Eugene, OR 97402 (503) 689-0913. (5/88)

100 DOUBLE STORY HIVES. 360 6-5/8 supers. 50 extra tops and bottoms. 50 extra deeps. Extracting equipment. Sherman, NY 14781 (716) 761-6355. (5/88)

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MUST SELL: WARM SOLAR HOUSE (average monthly electric bill $12.00), large insulated concrete shop, and 168 acres in a foothill area used by beekeepers as a refuge from insect sprays. This place really is nice. Write for details and photos: Mike O'Brien, Box 74, Cambridge, ID 83610. (5/88)

25 COLONIES, 1-1/2 STORY, $55.00 each. Ralph Wischmeyer, 13203 Road 8, Ottawa, OH 45875. (419) 523-4145. (5/88)

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COMMERCIAL QUALITY SUPERS — 9-5/8 @ $2.85, 7-5/8 @ $2.75, tops & bottoms @ $1.70. Satisfaction guaranteed. Orders less than 50 add 50¢ each. For prices or to order, write: North Idaho Woodcrafters, Box 201, Spirit Lake, ID, 83869. (5/88)

RADIAL HONEY EXTRACTORS, stainless, 5 and 10 frames, patented. Also complete line of equipment. Write or call: GAMBLE'S Bee Supply & Candle Co., (919) 299-3973 after 5 PM weekdays, anytime Sat., P. O. Box 7997, Greensboro, NC 27417. (TF)

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QUEENS FROM PRODUCTIVE, gentle, Italian stock. PACKAGES, HIVES. Discount prices on QUEENS begin May 2nd. OTTE APIARIES, Route 2, Box 99-AG, Karnes City, Texas 78118. Phone (512) 780-3521. (6/88)

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CLEAN FRESH FROZEN AMERICAN BEE POLLEN, give us your needs and we will quote prices. Howard Weaver & Sons, Rt. 1, Box 24, Navasota, Texas, 77868, or phone: (409) 825-7714. (TF)

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PURE, CLEAN LOW MOISTURE POLLEN $3.90/lb PREPAID. Min. 10 lbs. **FREE UPS SHIPPING.** STAKICH BROS., INC. 1155 Vaughan, Bloomfield Hills, MI 48013 (313) 642-7023. (TF)

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PREMIUM CLOVER, BUCKWHEAT, WILDFLOWER or ORANGE BLOSSOM in bottles, 60 lb. tins, 30 lb. jugs or drums. STEWART HONEYBEE PRODUCTS, 60 Council Avenue, P. O. Box 429, Wheatland, PA 16161. (412) 346-4664. (TF)

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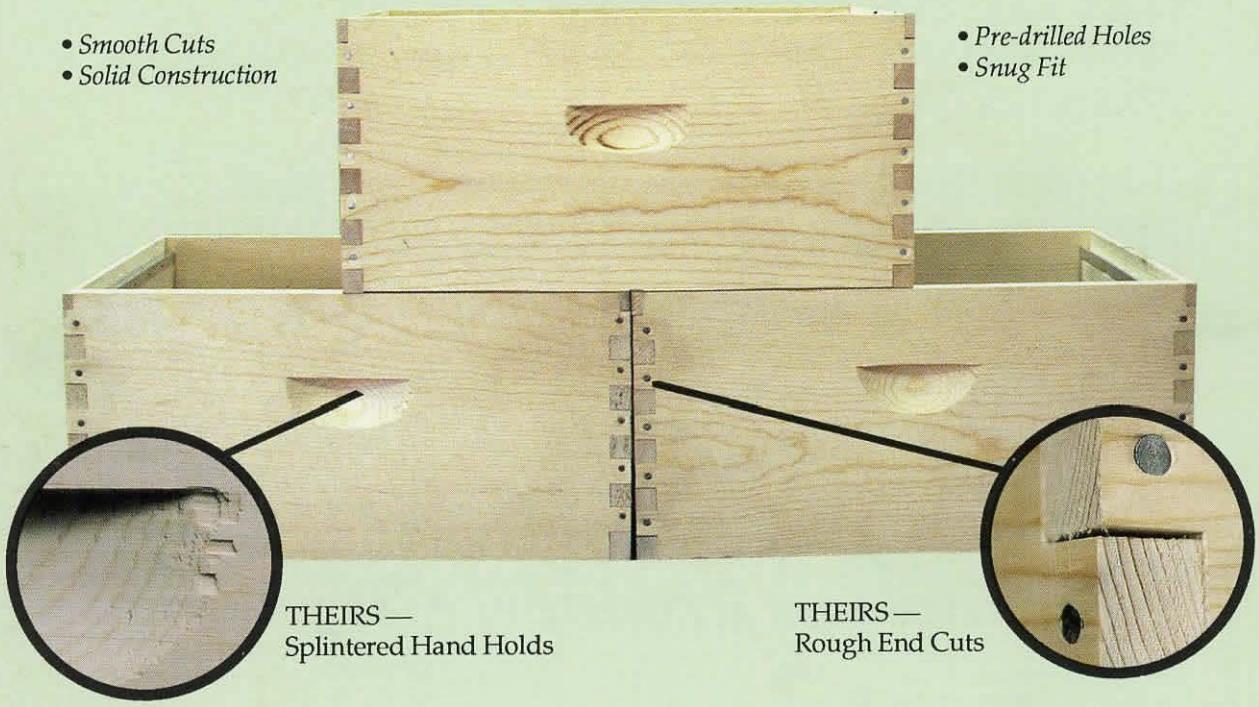

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