MAY '91

GLEANINGS IN BEE CULTURE

INSIDE . . .

THE RIGHT STUFF

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Columns

Departments

COVER... Apples are only one of the crops you can plant to make food for both you and your bees. The Incredible, Edible Garden, *which starts on page 286 lists a whole table full of good things to eat, and good things to grow.*

MAY '91 CONTENTS

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Features

INNER·COVER

Other than the month my birthday falls in (no, I'm not telling), May is absolutely the best 31 days in the year (yes, even better than Dec.).

May means I can finally get rid of my even light coat for a few months, it means weather dry enough to actually get something done outside; and it means **SPRING**, in bold, underlined, capital letters.

Let me tell you about spring in my part of the world. Like everywhere it officially arrives in late March. But with raw winds, usually some snow on the ground and always a touch of frost in the air it's hard to tell.

Actually, Spring arrives much like your somewhat distant Uncle Harold and Aunt Haddie, in from somewhere warmer than where you are at the moment. But, like what too-often happens nowadays, their luggage didn't.

So, in late March there's this glimmer of sun and hope as they get off the plane, but clouds and cold descend when no baggage follows.

Then, a bit later Aunt Haddie's two little bags arrive from Des Moines and there's another shot of warm and wonderful for a few days, but it soon settles back to the cold and cruel of Ohio's late winter wonderland.

In Mid-April Uncle Harold's two-suiter and the rest arrive and yet another, but longer spring-like pause brightens the world, and tantalizes for a few days more.

But May. With May comes dandelions and lawnmowers, warm nights and just-a-touch of floral fragrance from the year's first southern breeze.

I'm not sure if Aunt Haddie and Uncle Harold are responsible for bringing this nearly perfect time, or it arrives the moment they leave. It doesn't matter. May's here. One more time.

•

This is also the time of year the subject of inspection, and inspectors, often comes up. It's been coming up more than usual lately, however, and in places other than local association meetings.

Basically, funding inspection costs for the beekeeping community is, like many governmental costs, coming under closer and closer scrutiny. Those who control purse strings are being pressured to spread their dollars thinner and thinner. Something must give.

A pattern that is emerging, rapidly, has users of a government service pay for the services rendered rather than have the cost absorbed by taxpayers. That way precious dollars go to people who can't pay – the human need services and other government sponsored projects like road building, education, and prisons.

So the cost of issuing a building permit is covered by those who 'benefit' from the permit. And now, some states are seriously thinking of putting colony inspections under the 'user service' category.

When confronted with this possibility, one of three reactions from beekeepers usually occurs:

1) Inspection is a divine right, and should not cost the inspected;
2) We don't need inspection if we have to pay for it, and;
3) Only those who want inspection should have it, and they should pay for it.

When most beekeepers in a state are hobbyists, or they make the most noise, the first of these reactions is likely to occur. But when most (or the loudest) are commercial sized operators, the second option seems most feasible. Which makes good sense if you think about it. After all, if a commercial operator can't diagnose the common (and even not-so-common) diseases, the chance they will manage a business successfully for any length of time is highly unlikely.

Which of these reactions is correct? Do beekeepers have an inalienable right to have their bees inspected (thus containing, to a degree, the spread of some diseases)? Or, should beekeepers be responsible for their colonys' health (and that of their neighbors, too)?

And what is an inspection worth? Does assigning a registration fee, by colony or yard entirely cover the state's costs? Is it worth five dollars, or fifty dollars to have an inspector show up and check your bees?

Is it fair to have some beekeepers inspected and not others? Should all pay and only some get inspected?

These are difficult questions, and depending on your perspective, there are several 'correct' answers.

And then there's the question of a National Inspection policy, making rules and regulations uniform across all states. Is this idea feasible? Who will fund it, how will it be carried out and who will enforce it?

Regulation, by some government body is a part of everyday life. So should inspection of honey bee colonies remain what it is now, be changed, eliminated, funded by users, funded by taxpayers, nationalized, or what?

There are as many opinions regarding this subject as there are beekeepers. It's time we explored this question, from the viewpoints of regulators, commercial, sideline and hobby beekeepers. Even those who use beekeepers for pollination should have a voice here.

What is *your* opinion on regulation and colony inspection? Drop me a line, keep it to the point and let's hear from you. Send it to Editor, Inspections, P.O. Box 706, Medina, OH 44256.

Kim Flottum

One More Time

MAILBOX

■ Good Question

In the several years I have been reading *Bee Culture*, I cannot recall an article that covers record keeping for hobby beekeepers as it pertains to the selection of hives for nucs, splits and new queens. While many articles stress the advantage of producing your own queens and nucs as a way to avoid infected stock or improving your stock, they do not address how those choices should be made. Never do they indicate what records are most important or what comparisons are valid.

I am interested in producing a few queens for requeening and nucs for increase. But where can I turn for guidance? A quick glance at a catalogue shows 17 relevant titles ranging in price from $8.95 to $85. How do I decide what to buy?

A couple of years ago you introduced your "Colony Record Notebook". I have not bought one because I would not know how to use it. Here is a suggestion. Publish an article detailing the records needed by the hobby beekeeper to make knowledgeable selections. Use the "Notebook" as the vehicle of the record keeping. A copy of the article could be included with the sale of each notebook as instructions. Another article could detail a program for the hobbyist to follow to select their best hive as stock for new queens.

Finally, have a member of your staff or contributors review the various books on bee breeding. Identify the books suitable for amateur use and the relative levels of skill needed to utilize their techniques. This buying guide would be very helpful.

I believe a series of articles on the hobby level that address the issues involved in selecting for nucs and queens is long-overdue and tremendously important. Don't write about the problems facing us with Varroa, Tracheal Mite and the African bee, we know about that; give us the tools so we can join the fight as so many writers ask.

I look forward to your response and articles. Thank you.

David Morris
Laurel, MD

Editor's Note: Mr. Morris brings up several relevant questions, some of which we have answers for, some are being prepared, and for others no response.

First, we are already preparing an article on choosing colonies to use for a variety of uses, including cell builders, dividers and more. Also, "The Queen & You" addresses these questions monthly, and I encourage you to read each Cobey & Lawrence column carefully.

Books on the subject are numerous, and we try and review new titles when they come on the market. Which is best, however, is often more a matter of opinion than fact.

Finally, each record book comes with complete instructions.

■ More Math

I would like to comment on your column labeled *Basic Math (sort of)*.

I agree with the time needed for the evolution from an egg to a new bee. I would like to comment on the rest of your conclusions.

Number one. The "normal" egg laying rate is 1000 per day. That means the queen walks to an empty cell, contemplates it for about 30 seconds, lays an egg, looks at it for another 30 seconds, takes 26 seconds to decide if she will lay another egg and walks to another cell. Or suppose she sits and does nothing for 12 hours a day. She would still take 43 seconds per egg. If you watch a queen in action you can see that this not the case.

The rate of build up of the colony population in the spring is NOT due to the degree of fertility of the queen, or whether there is stimulative feeding or the addition of pollen or pollen substitute, but rather, it depends on (a) the NUMBER of overwintered bees and (b) the temperature.

An overwintered queen can and will lay many more eggs in the early spring months than the force of overwintered bees can feed and cover.

As you stated, it takes about three weeks after the first egg is laid before the first new bee emerges. So until three weeks after the queen begins to lay, there will be less than half of the overwintered population to cover and feed all those new larvae.

As an example, if there is a five pound, (15,000 bees) overwintered colony on March 1, and the weather is warm enough so these bees can cover and feed 7000 larvae, and keep the resulting pupae warm, in three weeks and three days (assuming the queen is laying at the rate of two or three thousand eggs a day) or in four weeks if she is laying 1000 per day, there will be enough bees to easily cover and feed 10,000 larvae. The bee population is now up to 21,000 or about seven pounds of bees and the date is April 1. By May 1, just before the nectar flow begins in many areas, there will be 10 or so pounds of bees in the hive – about the minimum amount needed for a reasonable surplus of honey in short season areas. Of this 10 pounds, there will be not over two or three pounds of field bees. Assuming the queen is still laying eggs, the largest number of house bees will be concerned with feeding the brood, since keeping them warm is now not the problem. So, in another three weeks the population can easily double as the queen *can be* laying five to 10,000 eggs a day.

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Check the frames of capped brood in June.

If you see, for instance, seven frames of capped brood, by definition, the queen would have had to lay 50,000 eggs in 10 days, and I have seen more than that number of frames of brood in mid summer.

The bottom line is this. The important thing in the spring is not to be concerned about stimulative feeding or providing pollen or substitute. Be concerned about how many bees are in a colony. If it is weak, combine it immediately. It cannot build up to any strength, even if you give them 10 pounds of sugar or honey a day, and a quart of pollen substitute at the same time.

And, of course, if you need or want to, requeen in the summer *after* the nectar flow is over. Looking at the above sequence of events in the spring, you can see that taking a week or longer to remove an old queen and install a new one, particularly late in the brood build up when new queens are available, will surely reduce your honey crop considerably.

Austin Knox
New Milford, CT

■ Chemical Questions

I'm concerned about chemicals for use in the hive to control mites.

We know the Apistan Strip kills varroa. However, sometime in the near future Amitraz may be approved for use. This will also be in a strip form, I'm told.

How does Amitraz work? On contact with the mite? Or is it like a fumigant?

What is Mite-A-Cur? How does this work? How do you use it?

Using strips is time consuming and expensive. Is there a faster way?

David E. Barber
Davisburg, MI

■ A Better System?

I was pleased to see the article on the Jenter queen rearing apparatus. I have been using a French-made device called the "Nicot" which is very similar, but just slightly simpler; it has one-piece cups instead of the two-piece units used in the Jenter. I have been using the Nicot for three years and find it to be a very simple and reliable device, particularly suitable for people whose eyesight isn't what it used to be or isn't quite what it should be to see the eggs or very young larvae.

The Nicot system has an advantage that I have not seen ascribed to Jenter in that accessories are available – in particular, there is a cell-protecting cage which can be used for that obvious purpose, or as an introductory cage. I find it particularly useful when I realize that I am not going to be available on the day that the queens or cells are due to be removed – it is very simple to take the frame of cells and place a cage over each cell thereby preventing the first one out from destroying the rest.

Neil Orr
Wooler, Ontario

■ Wants Refund Right

In my opinion your editorial in the September 1990 issue of *Bee Culture* was good. It raised questions that needed addressing. Attempts to eliminate the refund will probably be the contributing factor in the death of the Honey Board.

Correspondent Larry Krause (January 1991) refers to the lobbying stage of the National Honey Act when he said – "... the refund provision was required by the USDA." It is my understanding that the Administration makes recommendations to the Congress on pending legislation, but members of Congress are free to accept or ignore.

I have no record of what the Secretary of Agriculture said about the National Honey Act, but I know very well what the American Honey Producers did – we lobbied for the refund, but didn't oppose the Act.

Berna Johnston
Socorro, NM

■ Beeswax & The Cure For Cancer

Radiation is a useful tool for treating certain types of cancerous tumors, and in recent years radiation therapy has grown as a field in leaps and bounds. Radiation is usually administered in the form of high energy X-rays produced by linear accelerators, or in the form of gamma rays produced by a source of radioactive cobalt-60. At Baystate Medical Center in Springfield, MA we have two linear accelerators and one cobalt-60 machine, with which we treat over 100 patients a day.

One of the wonderful properties of beeswax is that it is "tissue equivalent", meaning that radiation behaves in beeswax the same way it would in human tissue (paraffin wax on the other hand, being petroleum based, is much less tissue equivalent). Because beeswax can be heated and softened, it is used in radiation therapy as a "bolus" material. By filling certain deficits in a patient's skin contour with beeswax bolus we "trick" the radiation into delivering a more uniform dose at a specific depth inside the body. Basically we change the shape of the patient with the beeswax in a small area to make the radiation do what we want it to do.

When we receive a shipment of beeswax it must be totally melted and strained to get it as pure and clean as possible. Once some has been used, it is saved, heated, and combined with other beeswax for another patient. If bees only knew how helpful they are to us!

Kevin Reynold,
Senior Dosimetrist
Baystate Medical Center
Springfield, MA
submitted by Roland Jarry
Springfield, MA

■ Recycled Jars

Here in our area quite a number of beekeepers sell their honey in "used" glass jars. I am one of them. I use salad dressing quart jars and buy new lids. Perhaps beekeepers could get a little extra mileage out of this if they had a little label on which was printed something to the effect that this honey container is a sterilized recycled glass jar. This label would be used by hobbyists who wouldn't be buying glass and plastic bottles anyway.

R.J. Swenson
Denver, CO

■ Fire Ants

I talked to two beekeepers in North Central Florida (Gainesville area) who had all their colonies killed by fire ants. I have seen ants mentioned in literature but not specifically fire ants. I

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would like to know what attracts them to the hives and just how they kill the colony. Do they attack the bees themselves?

I know that vegetable oil and shortening attracts them, and suppose that you can't use vegetable patties in areas where there are fire ants.

I would like to know simple ways to keep them out of hives. I suppose one would have to put metal legs on the bottom board or on the hive stand and have them resting in metal cans with motor oil. No. 10 cans are probably the easiest to get.

Any ideas would be appreciated.

Gerhard K. Guth
Micanopy, FL

Editor's Note: See the article on Hive Stands this month for some ideas. But, how do fire ants kill colonies?

Elbow Room Revisited

Back in February, we asked readers to drop us a note and tell how many frames they used in brood supers, honey supers and what size honey supers they used.

Nearly 30 people sent us information, ranging coast to coast and border to border (albeit somewhat spread out).

Not surprisingly, 63% use 10 frames in brood chambers. The remaining 37%, using nine frames are located throughout the U.S., in no particular pattern.

Nine frames in honey supers was the most common response (81%), while a few (11%) used 10 frame, and even fewer (8%) used eight frames. Eight frame equipment wasn't used by any respondent.

Honey super sizes were a bit more mixed, but medium supers were most commonly used (68%), while shallows (24%) and deeps (8%) were less common.

Although these results aren't at all scientific, they included 10 states, from New Hampshire to Washington and Minnesota to Texas.

And thanks to those who sent in their information.

HONEY BOARD VOTE

As most of you are aware, a referendum will be held this year on the continuation of the National Honey Board. This is required by law to be held once every five years. There will be two issues on the ballot: one on continuing the program, and the other on continuing the refund provision of the program.

Agriculture, in general, is an industry which has relied upon the government to provide assistance when it is in financial trouble. Those days are slowly coming to an end, as evidenced by the reduction of commodity prices in the 1990 Farm Bill. The National Honey Board was created as a self-help program. The sooner we can stand on our own, the better for the industry.

The Board was created approximately five years ago. It took much of the first year to organize and interview prospective personnel and advertising agencies. By the second year, the Board had made considerable progress towards pursuing the goals of the marketing order. The National Honey Board is helping to strengthen the market for honey. There is apparently little controversy over continuing the program.

However, the refund provision has been a topic of controversy. Arguments have been made that a producer may need a refund in the event of a bad year. However, many producers have had bad crops in years past, but still continue to pay the assessment.

The American Beekeeping Federation membership has instructed the group's leaders to pursue a packer assessment, too. The National Honey Packers and Dealers Association has also supported this by a resolution passed two years ago. The first step in this process is the elimination of refunds. In a highly competitive market such as ours, most packers (by their own admission) would not be willing to pay an assessment unless all packers were required to pay, thereby passing the costs on to the consumer.

What are the choices? You can look at the prices of honey and your markets to determine if you think the Honey Board has helped you financially. Talk to honey packers and get their opinions on whether sales have increased. If you think the Board has made a positive contribution to the industry and your business, you should vote *yes* to continue the order and *yes* to eliminate refunds.

In conclusion, bear in mind that our competitors in the sweetener industry are selling products that are much cheaper than ours, but are spending millions of dollars in advertising. If we want to increase our share of the market, we need to keep the National Honey Board in operation. I strongly urge you to vote on the upcoming referendum.

Bob Brandi, President
American Beekeeping Federation

Mechanics of Voting – National Honey Board Referendum

- Referendum is scheduled for Summer, 1991.
- All producers and importers who pay the assessment will receive a ballot by mail.
- Ballots will contain two questions:
  1. Should the Honey Board be continued?
  2. Should refunds be eliminated?
- Ballots will record votes on both questions, as well as 1990 pounds of honey produced.
- Ballots will be mailed by United States Department of Agriculture, Agricultural Marketing Service.
- Ballots will also be available at ASCS offices.
- Ballots need to be returned by mail to USDA, AMS.
- USDA, AMS will audit ballots. The reported poundage must represent 1990 honey production.
- USDA will publish the outcome of the voting. At publication, these results will become final.

ANNUAL HONEY REPORT

The 1991 Annual Honey market Report has something for everybody this year, whether you sell 20 lbs. a year at work, or 20,000 lbs. a year to a chain of grocery stores. Even if you don't sell a drop, the information presented here will give you a better idea of why people keep bees the way they do, and where they do.

The information comes from a wide range of sources, but primarily our monthly honey reporters supply us with the wholesale and retail prices and colony conditions in their regions. These reporters represent a nearly perfect cross section of our readers, too, so that what they report is most useful to the greatest number of our readers. They are, therefore, primarily hobbyists and sideliners, who sell out the back door, at work, or maybe to a local farm market or grocery store. They generally get a better price for their product than commercial outlets because they have a local product, take pride in production and have a working relationship with their customers.

Some reporters are commercial sized producers, though, and deal routinely with large grocery chains, brokers or packers. We even have some packers who supply us with their prices, too. Both of these groups get lower prices because they sell for greater quantities, bottle under another labesl and/or are in a far more competitive market.

Then, during April we look back at all the figures our reporters have sent in during the past 12 months and summarize the data for each region. We also take a look at how each month's prices stack up when compared to the rest.

We examine other factors relative to sales, marketing, pricing or production, too. So combined, the Annual Honey Report contains a wealth of information for anybody who makes honey, sells honey or deals at all in bees or beekeeping.

If you follow the prices listed in your region each month, it can be difficult to spot changes in any specific product, or any overall increase or decrease in prices. At best, each month's report will tell, generally, how your prices stack up to others in your region, and how your region compares to other parts of the country.

They will, however, give a basic guideline on the *range* of prices any particular product sells for, and where you should consider pricing yours. The

Continued on Next Page

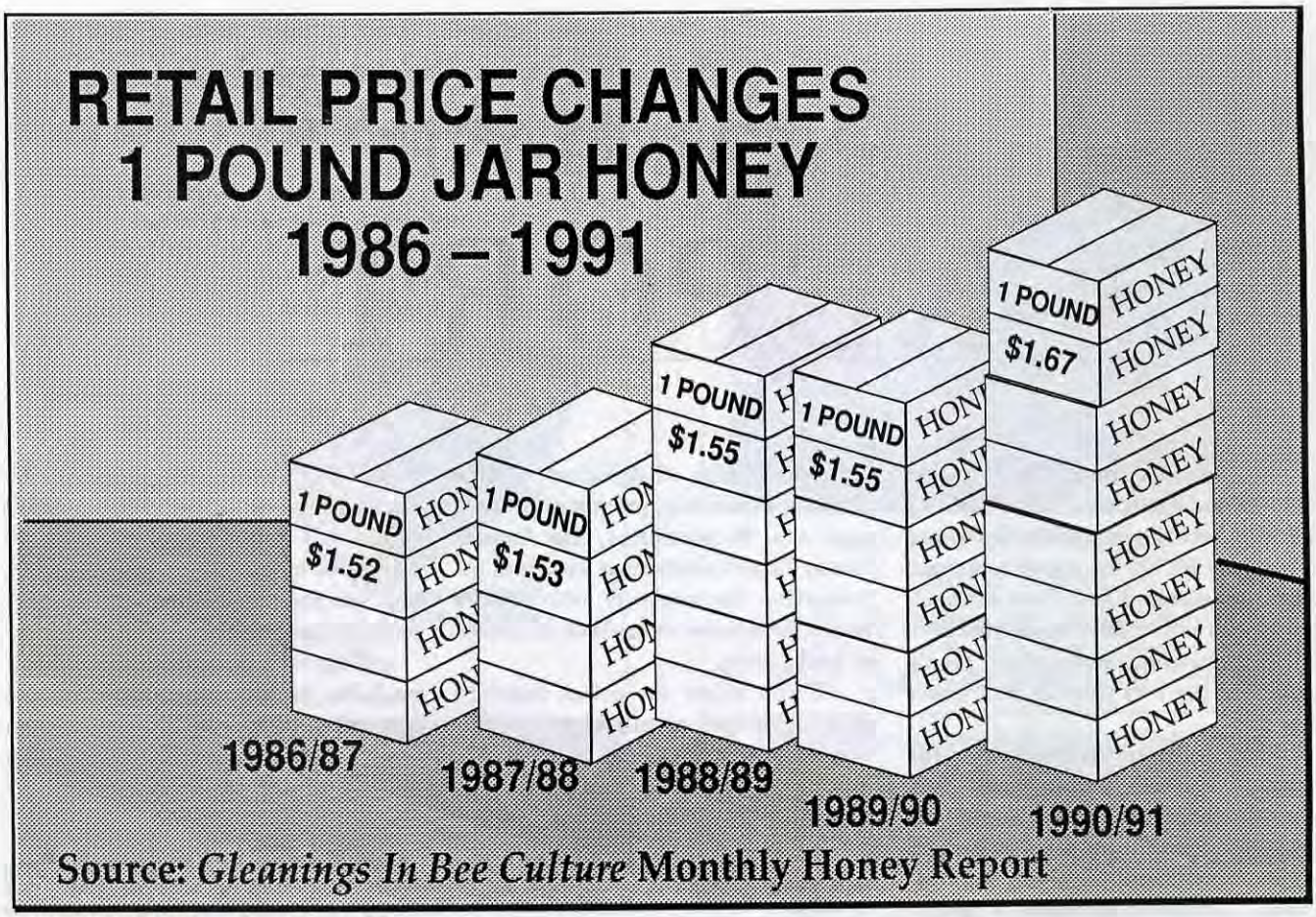
REGIONAL REPORT

	1	2	3	4	5	6	7	8	A	89-90	88-89	87-88
60 lb. White	41.05	41.80	42.12	37.98	40.97	43.71	42.63	41.76	41.50	38.19	37.78	36.06
60 lb. Amber	40.60	36.33	39.56	35.41	37.50	41.35	38.41	37.51	38.33	35.19	34.68	33.39
55 gal. White	.50	.51	.49	.49	.51	.55	.54	.55	.52	.49	.51	.55
55 gal. Amber	.49	.46	.44	.47	.45	.49	.51	.50	.48	.45	.46	.54
1 lb. jar (24)	29.10	29.53	30.70	24.49	24.23	24.38	28.70	29.55	27.58	26.50	26.19	25.75
2 lb. jar (12)	26.48	25.99	31.64	24.57	23.83	23.86	28.05	28.39	26.60	25.60	25.40	25.08
5 lb. jar (6)	31.72	26.85	24.87	26.99	25.29	26.00	26.99	26.99	26.96	26.25	25.99	25.53
1/2 lb.	1.00	1.15	1.13	1.29	.99	.97	1.06	1.02	1.07	.95	.94	.87
12 oz. Squeeze	1.52	1.48	1.48	1.39	1.28	1.22	1.42	1.44	1.40	1.34	1.34	1.32
1 lb.	1.68	1.79	1.69	1.65	1.56	1.56	1.67	1.63	1.65	1.55	1.55	1.53
2 lb.	2.87	3.02	3.21	3.32	2.70	2.78	3.04	2.73	2.96	2.76	2.78	2.68
2-1/2 lb.	3.35	3.72	3.58	3.39	3.40	3.31	3.54	3.33	3.45	3.23	3.49	3.38
3 lb.	4.15	3.95	4.48	3.62	3.87	3.90	4.08	3.80	3.98	3.76	3.77	3.71
4 lb.	4.63	5.09	5.26	4.82	4.74	4.45	4.85	4.68	4.82	4.14	4.75	4.66
5 lb.	6.76	6.10	6.24	6.32	6.03	5.21	5.96	5.96	6.07	5.92	5.77	5.73
1 lb. Creamed	2.20	1.26	1.62	1.62	1.45	1.89	1.87	2.01	1.74	1.59	1.63	1.61
1 lb. Comb	2.42	2.08	2.19	2.73	2.45	2.04	2.61	3.01	2.44	2.44	2.32	2.16
Rnd.Plas.Cmb.	2.33	1.98	2.15	2.13	2.41	1.78	2.22	1.89	2.11	1.93	1.88	1.91
Beeswax (Lt)	1.49	1.11	1.20	1.42	1.14	1.00	1.05	1.30	1.21	1.07	1.03	1.00
Beeswax (Dk)	1.33	.99	1.03	1.12	1.00	.91	.95	1.19	1.07	.94	.90	.85
Pollin. (Avg.)	30.42	20.79	26.57	29.79	25.58	23.36	26.58	27.22	24.10	19.97	23.16	21.55

MONTHLY REPORT

	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR
60 lb. White	41.12	42.44	42.53	43.23	40.88	43.34	41.98	40.98	40.19	40.30	40.71	40.35
60 lb. Amber	37.09	38.48	38.95	40.47	38.58	39.98	39.17	38.86	37.27	37.03	36.93	37.22
55 gal. White	.55	.56	.55	.54	.49	.48	.52	.50	.51	.52	.50	.49
55 gal. Amber	.49	.48	.50	.51	.46	.45	.48	.47	.48	.47	.47	.47
1 lb. jar (24)	27.57	28.98	27.68	28.21	27.55	26.11	28.82	28.32	26.41	27.45	27.10	26.80
2 lb. jar (12)	26.78	28.99	27.95	26.82	26.16	25.66	26.78	26.85	25.91	26.01	26.14	25.18
5 lb. jar (6)	27.09	28.63	27.80	26.99	26.47	25.60	26.15	26.00	26.73	28.06	26.92	27.10
1/2 lb.	1.02	1.09	1.11	1.09	1.04	1.11	1.08	1.10	1.01	1.07	1.09	1.09
12 oz. Squeeze	1.37	1.40	1.43	1.40	1.37	1.40	1.39	1.39	1.41	1.44	1.41	1.41
1 lb.	1.59	1.64	1.64	1.66	1.65	1.65	1.70	1.66	1.62	1.68	1.70	1.72
2 lb.	2.99	3.02	2.83	2.99	2.82	2.99	2.95	2.97	2.93	3.04	2.96	3.03
2-1/2 lb.	3.53	3.39	3.42	3.42	3.55	3.37	3.40	3.46	3.34	3.70	3.42	3.40
3 lb.	3.94	4.09	3.92	3.94	3.97	3.85	4.08	4.11	3.92	3.99	3.90	4.08
4 lb.	4.87	4.73	4.66	4.75	4.94	4.68	4.76	4.81	5.04	4.91	4.90	4.75
5 lb.	6.07	6.04	6.05	6.10	6.06	6.09	5.92	5.95	6.04	6.22	6.16	6.17
1 lb. Creamed	1.65	1.55	1.79	1.56	1.65	1.54	1.77	1.83	1.94	1.94	1.82	1.85
1 lb.Comb	2.29	2.44	2.56	2.49	2.49	2.19	2.19	2.24	2.76	2.41	2.68	2.56
Rnd.Pls.Cmb.	1.97	2.07	1.96	1.86	1.96	2.16	1.99	2.01	2.36	2.15	2.35	2.50
Beeswax (Lt)	1.07	1.15	1.35	1.09	1.14	1.26	1.26	1.13	1.31	1.27	1.26	1.26
Beeswax (Dk)	.95	.97	1.36	.98	1.04	1.04	1.04	.99	1.12	1.07	1.11	1.13
Pollin. (Avg.)	24.31	24.83	25.16	26.31	26.47	26.18	26.25	0.00	28.76	27.81	26.86	26.21

Average prices per month for products across all regions, May 1990 - April 1991.

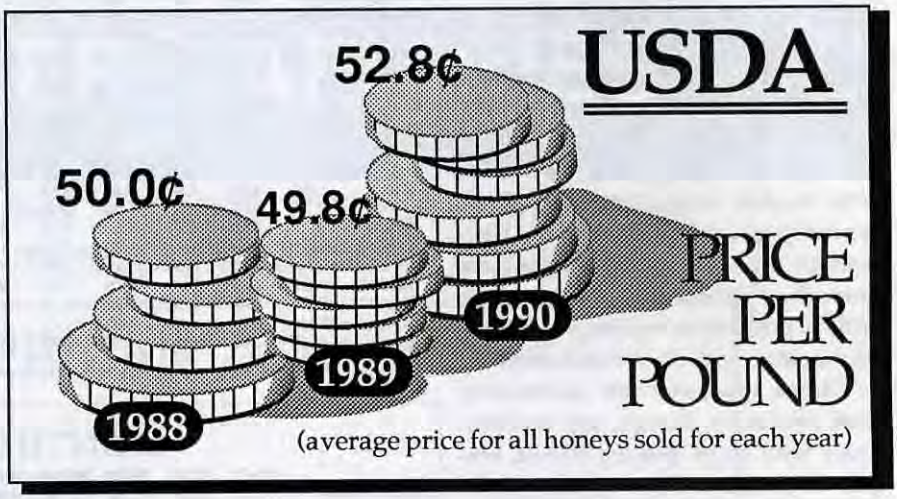


HONEY REPORT ... Cont. from 255

ultimate decision-making factor lies with knowing your costs, though. But honey is, mostly, a price driven commodity, and knowing what 'the other guy' is doing must always be considered. Given that you can set your prices using our monthly report as a *guideline*. This year our Annual Review gives a four year history of our report data, and three years worth of USDA data, all of which shows a steady, and positive price increase during that time.

The Regional Summary Chart shows the average price for each product in each region for the year. A single price, in the Average Column represents the price of a particular product across all regions for the entire year.

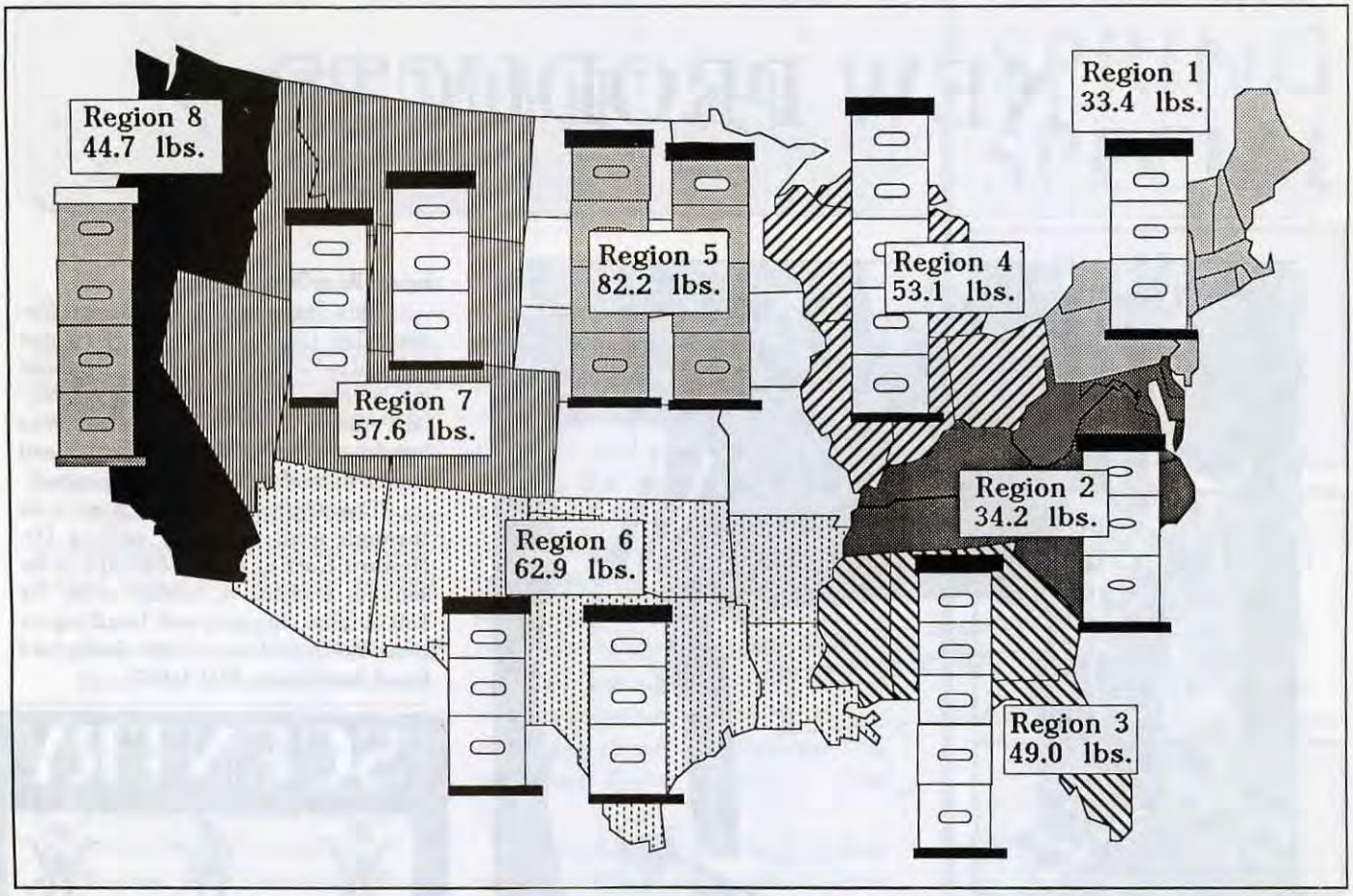
Also included on the right side of the Chart are those prices for the last three years (we started our report in 1987/88). Taken together, the gradual increase in all classes (except bulk, in drums) is apparent. Some of the most obvious are five gallon pail prices, 1/2 lb. retail jars, 1 lb. comb, 1 lb. retail jars, and even pollination fees. Overall,



REGIONAL PRODUCTION BY YEAR

	1986		1987		1988		1989		1990		Avg.	
	*Col.	Yld	Col.	Yld	Col.	Yld	Col.	Yld	Col.	Yld	Col.	Yld/Col
1	197	22.0	201	35.7	216	37.5	204	35.9	187	36.1	201	33.4
2	117	28.3	116	41.0	123	40.5	118	27.7	94	33.7	113.6	34.2
3	484	47.4	440	49.2	432	59.6	446	31.8	396	57.2	439.6	49.0
4	196	33.0	188	62.8	190	63.8	320	47.4	293	58.6	237.4	53.1
5	613	86.3	640	92.8	829	97.8	941	65.3	849	69.0	774.4	82.2
6	284	57.5	276	64.2	281	65.7	319	60.3	314	66.7	294.8	62.9
7	235	55.8	222	66.2	237	55.0	393	54.7	394	56.2	296.2	57.6
8	654	47.7	630	43.3	645	46.3	693	39.7	621	46.3	648.6	44.7

*All colony #'s in 1000's.



prices have increased about 6.0% in the last 12 months, and 9.0% over the last four years. Obviously, the last year has been significant in honey pricing. (See Retail Price Change, 1 lb. Jar Chart.)

The prices for all honeys reported by the USDA support this jump in the last year, showing a healthy 5.8% increase. They include all classes and colors so their figures always tend to be a bit less than those on our report (see USDA, Price Per Pound chart).

One aspect we explored this year was honey production per colony. We looked at production by region by year (see Regional Colony Production by Year), and at the average production per colony over a four year period by region (see Regional Production Map).

A quick glance shows that region five (the Dakota's, MN, IA, NE, MO and KS) is the highest producer per colony in the U.S., and that there are more colonies per region located there. The message is clear (look again at Regional Colony Production by Year Chart).

Finally, we look at four years data for the best month to sell honey relative to price. In four years we haven't been able to discern any pattern when looking at the big picture. Generally, honey sells better in late fall and early winter than in summer but our data doesn't support that generalization. In four years, we've found the highest priced honey to be sold during January, November, March and June. On average, though, November is the best month to be selling honey, which takes advantage of each year's new crop and the pending Christmas holiday sales.

Selling honey is a tricky business. The ultimate price depends on costs, competition, production, supply and demand. All of these must be taken into consideration when you stamp the price on the jar before you set it on the shelf.

Knowing your costs, what the competition charges, how much is available in your locality and what people are willing to pay *will* set your price.

But first, you have to know. □

Ranking Report

	M	J	J	A	S	O	N	D	J	F	M	A
87-88	3	6	8	4	7	2	5	3	1	5	6	-
88-89	7	9	11	10	4	8	1	6	2	5	3	3
89-90	5	9	11	8	11	3	2	6	8	7	1	4
90-91	9	1	3	2	8	5	4	6	12	7	10	11

Rankings of each month for honey prices 1987 -1991.

NEW PRODUCTS

The new Super Hive Carrier is designed to lift and carry hives smoothly and safely – without the disturbing tilts and jolts encountered with a hand truck or wheelbarrow. And it is easy to use. The Super Hive Carrier slips over the hives (and/or supers); special grippers fit into the handles of the hive body. The beekeeper and his or her assistant simply bend their knees and lift straight up.

The designer of the Super Hive Carrier, Dr. Howard Katz, is a Maryland dentist/beekeeper who used to borrow an old hive carrier from a beekeeper friend of his. But he found that the carrier he borrowed was hard on his back; there was no room to bend his knees for safe and proper lifting. So when his friend moved away, and he could not find a hive carrier to borrow or buy, Dr. Katz decided to design his own. He made a carrier with longer handles to prevent backstrain and safety grips to provide him with a good hold. Other beekeepers borrowed his prototype and became interested in owning their own carrier.

"I never dreamed this would be such an incredibly useful piece of equipment," says Dr. Katz. "Even my children can help me move hives and supers now, and with all my hives, I'm glad for anything that makes the job easier."

Dr. Katz manages 22 hives in the Baltimore and Pasadena areas of Maryland with his partner Donna DeFontes, who is a Maryland State Bee Inspector. They sell their honey (about 1500 lbs. a year) to several Baltimore gourmet restaurants and food stores under the label "Bear Bottom Honey"

This "save-your-back" design Super Hive Carrier is made of rugged galvanized steel and weighs only about six pounds. It folds easily for convenient storage anywhere. Each carrier is handmade and individually tested, and is guaranteed for the life of its owner.

The Carrier is now available through mail order by calling Dr. Howard Katz at (301) 653-0314 or by sending a check or money order for $39.00 plus shipping and handling to: Bear Bottom Honey, 6818 Campfield Road, Baltimore, MD 21207.

Scentry Inc. is now distributing a new brochure that describes their Apiary products.

The brochure provides detailed drawings of two Swarm Trap designs and explains the unique advantages of each model. Discussions covering Scentry Pheromone Lures and Tra-Kill®, a menthol product for tracheal mite control are included. The brochure also provides shipping information, prices and an order form.

To receive your *free* Scentry Apiary Products Catalog call 1-800-548-6531 or write Scentry Inc. P.O. Box 426 Dept. CBG, Buckeye, AZ 85326.

NEW VIDEOS

Steve Forrest of Brushy Mountain Bee Farm and Dauenhauer Productions, both in North Carolina, have produced a series of five videotapes on practical beekeeping topics that are of value to both beginning and advanced beekeepers.

These videotapes deal with topics of immediate interest to most beekeepers and include the following five titles:

1. Keeping Bees and Producing Honey; An Introduction (160 minutes)
2. Requeening and Colony Division Made Easy (60 minutes)
3. A Look at Queen and Package Bee Production (60 minutes)
4. Tracheal Mite Detection, Prevention and Cure (60 minutes)
5. Varroa Mite Detection, Prevention & Cure (60 minutes)

Each tape was developed with three priorities in mind: 1) devote the tape primarily to practical information which is of immediate value to the beekeeper; 2) use multiple "experts" to cover any topic which is controversial or which is still in the development stage; and 3) actually demonstrate those practical but important aspets of beekeeping.

Here is a review of the first tape:

Keeping Bees and Producing Honey: an Introduction. This 160 minute tape is the longest of the series. A beginning beekeeper could buy a book that provided some, if not most, of the same information but the video displays and demonstrations on equipment assembly, package bee installation, and honey extraction cannot be duplicated in a print format. There are other video productions that cover some of the topics in this tape but I am not aware of any that present this breadth and depth of coverage. A simple listing of the topics in this tape provide a good measure of its usefulness to the beginning beekeeper: Sources of beekeeping information; Assembling a hive; Selecting a hive (apiary) location in rural and suburban settings; Basic bee biology and life cycle; How to light a smoker; Package bees; Nuc hives; Feeding bees; Routine hive management; Making honey; Packaging honey; Bee diseases; Wax moths and Winter preparation of the hive.

This beginner's tape is my favorite of the series and I recommend it highly (I would recommend it even if I were not in some of the segments).

There are four more tapes available: *Requeening and Colony Division Made Easy; A Look at Queen and Package Bee Production; Tracheal Mite Detection, Prevention & Cure; and Varroa Mite Detection, prevention and Cure.*

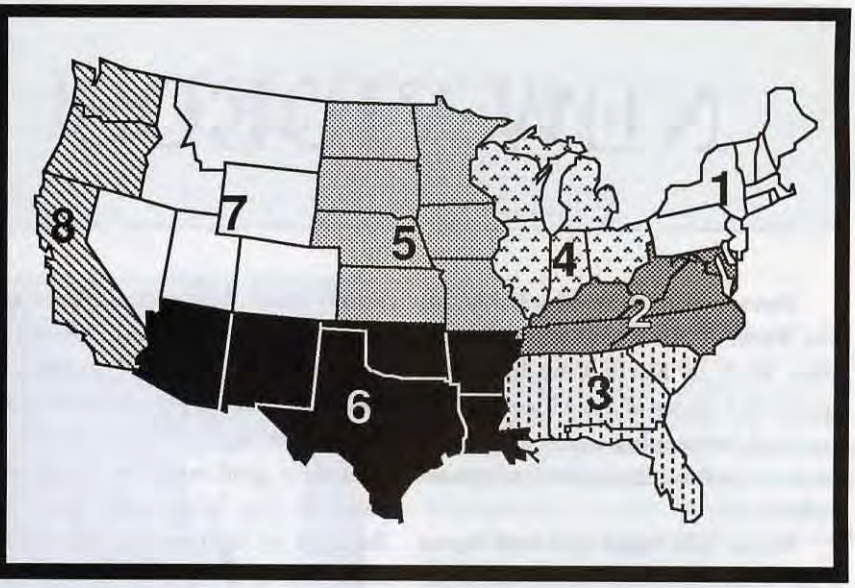
This tape series fills a definite need in that it provides practical and useable coverage of topics that are of real concern and interest to most beekeepers. The format of using multiple experts to cover most of the topics on each tape is beneficial in that it removes much of the bias that may result in interviewing only one source, no matter the source. All of the tapes contain a wealth of useful information for beekeepers packaged in a very practical format.

John Ambrose
NC State

MAY
Honey Report

May 1, 1991

REPORT FEATURES SUMMARY: R=Range of all prices; A=Average prices across all regions; LM=Last month's average; and LY=prices one year ago.



	Reporting Regions 1	2	3	4	5	6	7	8	Summary R	A	History LM	LY
Extracted honey sold bulk to Packers orProcessors												
Wholesale Extracted												
60 # Wh.	42.33	39.95	42.90	37.75	40.14	48.00	43.80	39.20	31.00-56.92	41.45	40.36	41.41
60 # Am.	41.67	35.18	40.00	36.00	39.03	42.19	42.00	36.05	31.00-53.86	39.04	37.15	35.42
55 gal. Wh.	.51	.43	.49	.51	.52	.59	.53	.56	.42-.72	.57	.50	.55
55 gal. Am.	.50	.41	.45	.49	.50	.52	.48	.51	.40-.87	.52	.47	.49
Case lots — Wholesale												
1/2 # 24's	17.62	17.66	24.50	22.55	22.77	24.55	22.59	26.35	12.00-30.42	22.46	–	–
1 # 24's	28.62	29.72	30.03	27.00	26.57	26.75	33.60	22.27	23.50-39.60	29.24	27.02	28.73
2 # 12's	26.92	27.88	29.11	26.22	26.83	18.25	25.69	29.48	18.25-38.40	27.57	25.67	27.21
12 oz. Bears 24's	27.33	29.86	31.92	23.42	26.95	27.60	27.95	27.45	21.00-41.40	27.72	–	–
5 # 6's	32.15	27.82	28.70	28.83	21.90	28.19	26.99	27.60	21.90-38.50	28.75	27.34	27.60
Retail Honey Prices												
1/2 #	1.05	1.06	1.37	1.23	1.26	.96	1.15	1.09	.65-1.69	1.12	1.10	1.02
12 oz. Plas.	1.61	1.60	1.60	1.34	2.21	1.49	1.37	1.50	1.13-3.29	1.57	1.42	1.45
1 #	2.31	1.80	1.97	1.73	1.29	1.85	2.39	1.91	1.29-3.39	1.81	1.70	1.66
2 #	3.00	3.10	3.62	3.35	2.39	2.60	3.21	3.38	2.25-4.00	3.15	3.02	3.16
3 #	4.11	3.70	3.75	3.99	3.75	3.45	4.25	3.88	3.25-4.75	3.88	4.10	3.96
4 #	4.75	5.13	4.44	4.99	5.89	4.15	4.96	4.50	3.75-6.99	4.96	4.75	4.91
5 #	7.33	6.22	5.69	6.37	6.25	4.97	6.19	5.66	4.97-8.50	6.23	5.82	6.27
1 # Cr.	2.13	1.50	1.86	1.69	1.55	1.65	2.55	1.91	1.25-2.50	1.84	1.84	1.72
1 # Cb.	2.65	2.00	2.10	3.25	2.98	1.70	2.19	3.32	1.25-4.50	2.71	2.49	2.30
Round Plas.	2.75	1.65	2.44	2.25	2.38	1.95	2.75	2.18	1.65-3.75	2.43	2.42	2.07
Wax (Light)	1.53	1.14	1.40	1.55	1.25	.97	2.00	1.13	1.00-2.00	1.30	1.40	1.09
Wax (Dark)	1.25	1.03	1.20	1.03	.98	.83	1.90	.90	.60-1.25	1.11	1.13	.95
Poll./Col.	28.33	17.84	35.00	26.25	30.00	20.00	25.00	31.00	16.67-35.00	27.01	27.31	25.70

MARKET SHARE

This is the month we publish our Annual Honey Report, a summary of the last 12 honey reports. We've also included data from the past four years, along with USDA price and production figures. Take a look. There's also two new categories in the report this month – cases of 1/2# jars and cases of 12 oz. bears. We have dropped the 2-1/2# comb/liquid price since it sold by so few beekeepers, and carried by very few *retail* businesses.

Region 1

Region 1 tends to be in two sections when looking at prices and sales. The highly populated areas of RI, CT, southern NY and NJ are almost always higher than the more rural areas of the region. Keep that in mind when observing prices here. Mite losses down this spring.

Region 2

Prices and demand of honey steady to slightly increasing over the past year. Beekeepers are optimistic about the coming year because of mild winter and the fact that losses due to mites are finally slowing. Previously uninfested operators still losing colonies, but they are fewer each year.

Region 3

Honey sales increasing due to increased moisture and better nectar crops in the last year. Citrus looks especially good this year, but others improving, too. Losses to mites on the downswing. Even varroa problems aren't overwhelming, but hints of resistance to Apistan being heard.

Region 4

Prices and demand pretty much the same this year as last. This has been, in most areas, a rebuilding period as significant loses last year reduced production, and income. A mild winter and poor fall have caused some losses this year, too, and rebuilding continues.

Region 5

Prices are pretty much dictated by buy back and bulk sales in this region. So much honey is produced here that it's amazing it's not given away (although some beekeepers feel that way, we're sure). Tracheal mites continue to be a problem here because of the high influx of colonies from nearly everywhere every year.

Region 6

The resurgence of this region economically in the past year has helped honey prices, as they tend to be a bit higher than average. The African honey bee will undoubtedly make some waves this year, but won't affect honey prices. The dry spell will play a much larger role, along with the financial well-being of the state.

Region 7

The mountain states, and the wild country to the north continue to command a high price for honey. Demand, at least in the urban areas remains high, and prices reflect that demand. However, there is a major discrepancy between bulk honey and retail in this region.

Region 8

Moisture, moisture and more moisture is the news in this region. Prices are steady, and rising, and, with at least some rain, production this year will be better. The western states agreement is still an unsettled affair, and colony movement is by more of a who-knows-who affair than business.

RESEARCH REVIEW

DR. ROGER A. MORSE

Cornell University • Ithaca, NY 14853

"Propolis sources; and, are bees lazy?"

Propolis is the name we give the gums and resins that honey bees collect and use to varnish the inside of their nest. Propolis waterproofs the sides and top of the nest. It fills cracks and crevices where noxious insects and bacteria etc. might hide. A small amount is used to varnish the insides of cells where brood is produced.

According to the report below, which is from Great Britain, more than 129 chemicals have been identified from propolis. Many of these are compounds that have an antibacterial effect, and, as is well known, in some countries propolis has been used for medical purposes. It is also pointed out that some people are allergic to some of the compounds in propolis.

Propolis from different sources varies greatly. For example, one compound, "which plays a major part both in the antimicrobial activities of propolis and in its allergenic properties, comprised 20% of the propolis balsam from hives at the Zoology Department, Oxford, but only 2% of the propolis balsam from hives at the University Museum," about 400 yards away.

After reading this paper I am again struck by the great variation that exists in natural products. I suppose we could think of propolis being much like honey. It comes in all colors and flavors. What suits one purpose may not suit another. We study natural products such as propolis to learn what they are and how they work. However, once we find a substance that has the desired characteristics, such as a medicine, it is better to make it synthetically and to be able to control the dose. One reason that some home remedies work sometimes, and not others is that the materials from which they are made, and the way in which they are made, varies from time to time.

How To Explain Lazy Bees

Many people think honey bees work hard all of the while. That is not true but there is a good reason why this is so. Many institutions use honey bees or skeps as symbols to indicate thrift and hard work. For example, the state of Utah has a beehive on its coat of arms. The Dime Savings Bank of New York used replicas of skeps as a sign of the same. And then there is the famous little thought from an author I'm not familiar with that begins, "As busy as a bee."

Of course, if one watches a foraging honey bee, it is true that she never stops work but flies as fast as she can from one flower to another collecting pollen and nectar. The truth as regards foraging is that it is a dangerous task with many enemies ranging from spiders to assassin bugs and birds that would thoroughly enjoy feeding on bees. From the point of view of their colonies, it is best that bees forage as rapidly as possible because indeed their lives are often cut short by predators. Because of all of the above I was interested to review the article below.

A recent paper by Steven Kolmes discusses "how a human or animal society might be organized." On one end is the society in which every participant has a specific set of tasks that consume 100% of his or her time. The other end is a "resilient society" in which a number of individuals stand ready "to meet any changes presented by the environment." The society in which everyone is busy all of the time is likely to outcompete a more flexible society if everything is stable. However, if the environment is changeable, then the society that has individuals free to respond to a new situation will do best. Kolmes discusses a variety of situations in the bee hive where flexibility is demanded.

In the final analysis, honey bees succeed because they can adapt rapidly to a new situation. In a colony there are always a number of bees that appear to be doing nothing; I have heard people call these "lazy" bees. While they are doing nothing most of the time they are really very important to the success of the colony and the term "lazy bee" is not at all appropriate. If the colony is attacked, soldiers are ready. If new food sources become available the flexible field force responds rapidly to take advantage of it. If water is needed to cool a hive on a warm day it can be collected quickly. This labor pool is important insofar as the success of the colony is concerned. It appears to be controlled hormonally and to have a genetic basis. Honey bees are survivors in a sometimes cruel and difficult world. □

References:

Greenaway, W., T. Scaysbrook and F.R. Whatley. *The composition and plant origins of propolis: a report of work at Oxford.* Bee World 71: 107-118. 1990.

Kolmes, S.A. *Recent progress in the study of adaptive behavioral flexibility in honey bees.* Bee World 71: 122-129. 1990.

THE QUEEN AND YOU

SusanCobey

Timothy Lawrence

"Queen Rearing Requirements"

There are many advantages to having young vigorous queens in your colonies. They produce larger honey crops and have less tendency to swarm, and they are generally healthier and have fewer problems with diseases and mites. These colonies are in better shape and therefore, easier to manage.

There are two basic factors that determine the characteristics and production of your colonies. First, the genetic makeup of the stock is responsible for the traits displayed by your colonies. And second, the environment in which your queens are reared will determine their vigor, longevity, and productivity. For the purpose of this article we will accept that you have selected good stock to propagate and already focus on the conditions under which your queens are reared. No matter how good your stock is, a poorly reared queen will always be inferior, and can only be expected to perform unsatisfactorily and be supersedured.

Three situations stimulate a colony to rear queens: swarming, supersedure and an emergency condition. **Swarming** is the natural process of reproduction and the most favorable condition to rear queens. This is a seasonal occurrence when hive conditions are optimal. **Supersedure** and **emergency** queens are often reared under stressful and suboptimal conditions. **Supersedure** is the *natural* replacement of a *failing* queen, which often occurs when a queen is old and cannot meet the production demands of the colony. It is also common when a queen is of unsuitable quality – reared under poor conditions, has been inadequately mated or is diseased. Queens reared under emergency conditions result when the original queen is suddenly lost or killed. **Emergency** queens are often reared from larvae of questionable age or given a deficient diet.

To rear large, productive queens you want to simulate swarm conditions and enhance the bees natural instincts. During swarm season colonies are in peak production and plentiful and nutritional food resources are available. There is a high proportion of young nurse bees in the colony and the hive is populous and crowded. The level of queen pheromone (queen odor) is reduced by the high population even further. These are the conditions you want to promote and create to rear your queens.

Whether you raise a few queens for your own use or thousands for sale, queen rearing is an art as well as a science. Like art, there are numerous and varied techniques to produce a particular result. Similarly there are numerous and varied techniques to rear queens. You will find almost as many techniques as there are beekeepers, and the system you choose probably will be a combination of several techniques and/or a modification of a method you have read or heard about. These various methods utilize the same basic principles and must be understood to consistently rear high quality queens.

Nutrition is the critical difference between a queen and worker bee. A fertilized egg has the potential to become either a queen or worker, depending on the diet it receives. The food fed to developing worker and queen larvae differs in composition and the amount fed. The royal jelly fed to queen larvae is richer in mandibular gland secretions and sugars than that fed to workers. The nature of the sugars in royal jelly and worker jelly differ as well. The high sugar concentration in royal jelly acts as a feeding stimulant.

Queen larvae must consume much larger quantities of food than worker larvae, and they literally float on a sea of jelly during their development. The growth rate and respiratory rate of queen larvae greatly accelerates at two to three days of age. Nurse bees visit the developing queen larvae ten times more often than worker larvae.

The level of juvenile hormone (JH) also plays a major role in determining caste differentiation of the developing larvae. The high rate of food intake of queen larvae stimulates the production of JH, high amounts of which induce specific proteins and enzymes essential to the development of queens. The level of JH in queen larvae rises dramatically on the third day of development. This is the critical turning point.

When grafting (transferring eggs from a regular cell to a special queen

cell you have provided), larvae transferred during the *first three days* can change their development dependant upon the type of cell in which they are placed. Larvae transferred *between three and four days* of age develop into intercastes with both queenlike and workerlike characteristics. By the fourth day the caste is fully determined and few larvae will survive transfer between cell types at this age.

These differences in quality and quantity of food fed to developing queen and worker larvae are why it is so important to graft worker larvae into queen cells as early as possible. Choosing older worker larvae to be reared as queens will result in an intercaste, or a small inferior queen. These queens weigh less, have fewer ovarioles, a smaller spermatheca and store less sperm. As a result, they lay fewer eggs, produce smaller colonies, and are often superseded prematurely.

When selecting larvae to graft into queen cells it is *best* to choose those less than 24 hours old, preferably 12 to 18 hours old. The larvae will be about one, to one and a half times the size of an egg. One way to obtain plenty of the right age larvae is to restrict the breeder queen to an empty comb. Give her an old, dark comb. She will prefer this for egg laying and it is much easier to see and transfer the tiny white larvae. For fast acceptance by your breeder queen this comb can be briefly placed in a hive so it is cleaned and polished by the bees. Give this comb to your breeder queen *four days* before you are ready tograft. The eggs will take three days to hatch and larvae will be less than 24 hours old on the fourth day, ready for the graft.

Queen rearing colonies should be continually fed sugar syrup and pollen. The syrup will stimulate wax production so your queen cells are large and well formed. Give the colony empty comb and foundation to work, this will reduce the amount of wax webbing between the queen cells.

Pollen is the critical protein source for queen development. Place a frame packed full of pollen next to the graft. Placement is important because the bees do not move pollen stores in the colony. At the same time feed pollen patties to the colony to ensure this food source is readily accessible to nurse bees attending the queen cells. Also, you want to eliminate any competition the nurse bees may have regarding whether they feed worker larvae or queen larvae brood. Before placing the graft in your cell builder colony remove any open brood. This *forces* the nurse bees to concentrate on feeding only your queen cells.

A queen larva will float in her food. Proper nutrition is critical when raising good queens.

A populous, congested colony is essential for optimal queen rearing. A high percentage of these bees must be young nurse bees with well developed hypopharyngeal glands (brood food glands), capable of feeding your queen larvae copious amounts of royal jelly. **Old bees will not do!** Old bees are reluctant to draw queen cells and physiologically less able to feed the larvae.

You can create the crowded conditions you need in several ways. Combine several colonies into one if necessary and reduce the available room in the new colony. Adding bees from other colonies to beef up your cell builder is another way to increase the population. This can be accomplished by introducing a package of young bees shaken from the brood nests of support colonies. Frames of emerging brood can also be introduced into your cell builder.

Crowd this colony with plenty of young nurse bees, young nurse bees and even more young nurse bees! When you have too many bees to fit in the box and a nice beard hanging above the entrance, your cell builder is ready for the graft. You can place an empty super (no frames) below for bees to cluster on during rainy days and cold nights.

The queen pheromone level in your cell builder must also be reduced or eliminated to stimulate queen rearing. This can be accomplished several ways and in varying degrees. You can remove the queen; cage the queen; or restrict her to one or several empty frames. Your cell builder can be queen-right or queenless. Queenless colonies tend to rear more queens and generally provide better acceptance of your graft. However, queenless cell builders have limited use and need to be replenished with new bees as the nurse bees age. These also tend to be more aggressive compared to a queenright cell builder. Queen-right colonies tend to do a better job of rearing and feeding the queen larvae, though. They usually have a better temperament, are more self sufficient and can be manipulated to rear queens over a long period of time.

Be sure to check all the brood in your cell builders for natural queen cells. It is most frustrating when one of these slips your notice and tears down all your beautiful mature queen cells. Shake the bees from the brood combs and observe the combs carefully. A scrawny, natural queen can emerge from a tiny, ill-shapen cell, sometimes passed over for a drone cell, tucked in the side of the frame. Also be sure to remove your queen cells *promptly* on day eleven. Remember, from egg to adult, the queen will develop in 16 days.

Keep these basic principles in mind when choosing a queen rearing system. Create and maintain a state of swarm preparation: hive congestion, lots of young bees, restrict the queen, ample and optimal nutrition. Work *with* the bees to enhance their natural instinct to reproduce. □

WHITEY BECKNER

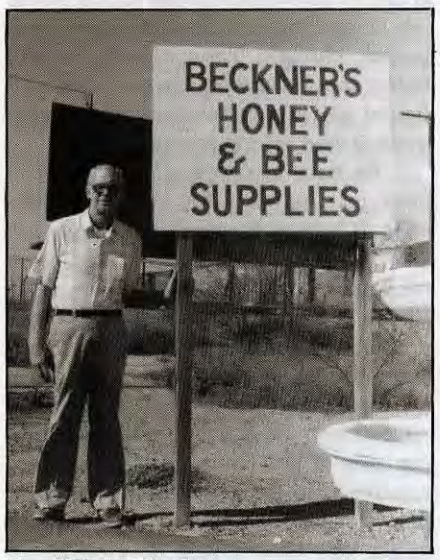
An Arizona Beekeeper outlines his year-round debt-free strategy.

LYNN TILTON

Arizona beekeeper Guy "Whitey" Beckner got into commercial beekeeping without ever buying a single hive or package of bees. "Back in Church Hill, Tennessee, I was taught never to borrow and never to rent," he explains during a visit at his honey store in Avondale, a scant two dozen miles west of downtown Phoenix.

Although he has been a commercial beekeeper for just 25 of his 62 years, Whitey confesses to being raised on bees. "When I was little, everybody in Church Hill kept bees. That was our sugar."

Whitey's father kept four or five hives and total production went to family use. The Beckners, like their neighbors, used hollow logs for hives. "We nailed a 2" x 4" in the center of the bee gum, and took comb honey from above the 2" x 4"." The rest was stores for the bees.



Guy "Whitey" Beckner

"Ma then would melt the comb honey on the stove and strain off the honey. That was the way we extracted honey." The home experience also taught Whitey to be unafraid of bees.

During World War II, Whitey answered his country's call, then moved to Indianapolis where he met Marilyn, his wife of 40 years and mother of their five sons and twin daughters.

So how does a Tennessee hill boy end up in Arizona's major metro area? "Well, our son Mike had asthma, so we packed up the six kids we had at the time, sold out in Indiana and moved to Phoenix in 1960."

During his time in Indianapolis, Whitey had gotten interested in race car driving. So he opened a service station in Phoenix, investing $700 in inventory and gas already in the storage tanks. Later, the family built a racing car. But he couldn't keep out of bees.

"I'd get reports of a swarm, so we'd take a hive body and go after the free bees." Soon his service station had 75 hives stacked around. "After awhile I had so many bees I couldn't work the station."

That's when Whitey sold out his franchise and went commercial. "I've only bought one hive in the past 25 years and I've never bought bees. My growth has come strictly from swarms or divisions."

Fortunately, this hill country beekeeper had several knowledgeable commercial beekeepers in the area who were willing to share their updated bee skills with him. "At first, when we weren't busy at the station we'd spend our time putting supers together. We'd catch the swarms on foundation and build from there."

Of course, everyone outside Arizona knows it's a beekeeper's paradise, what with blossoms all spring and summer long. Furthermore, a commercial beekeeper needs but one hive body with nine frames of bees to really be in business.

On the other hand, pesticides are a genuine, constant threat and worry for keepers. For Whitey, the pesticide threat meant a logical move, getting the bees out of the valley. "So my sons and I would load up leased truck trailers and take a 1,000 hives to North Dakota for the summer."

That sounds like a simple solution, until one realizes it's 1600 miles from Phoenix to Fargo. "We did that for four years," he adds.

Since Whitey couldn't see any reason to haul honey home for extraction, he rented a part of a warehouse close to his beeyards in North Dakota and extracted production there. "We had 20 locations. We extracted the honey and stored it outside in drums. The first year we brought the empty supers back." But Whitey quickly learned that wax moths are a much larger problem in Arizona than in North Dakota, so he took to storing empty supers in the northern warehouse.

"Here we keep supers on hives from March to November to keep our losses to wax moths down." Nor is Whitey one to move supers when he wants to check bees. Thus, all his hive bodies (brood supers) are on top of the honey supers. This means worker bees don't have to crawl over brood on their way to honey supers. It also means all Whitey has to do is pop the lid on a hive, give a few puffs of smoke along the top bars, and check brood, sans helmet, veil, gloves or beesuit.

With a 10-month season for beekeeping, Whitey and his family have just 60 days for building equipment and taking vacations. This doesn't count their racing. "We've done well there, considering that we've put in less that $25,000 in a car. We compete

against those who invest $50,000 or $60,000." During the off-season, the car is kept in their honey house, next door to their home in Buckeye. "We take the tires off and put it on a dolly. This saves the struts and makes it easier to move the car around the shop. It's always in the way," he says with a fondness of a parent speaking about a child.

Whitey then explained the family's year-around bee schedule. "I copy off Jim Powers of Parker. I've been buying queen cells from him for years. Queens are the only bees I ever buy, and I requeen every hive every year. After all, you have to have a young vigorous queen for top production.

"Around here a beekeeper must average 100 pounds per hive in order to make a living." Whitey's production in 1990 totaled 165,000 pounds, or 110 pounds per hive.

"We ship out a lot of honey, but our store, which we opened in 1988, gives us some retail sales." His clientele includes a host of Hispanics as well as Aglos.

But the heart of the business, like that of other successful beekeepers, is year-round bee care. And that starts with young, vigorous queens. "First, I go through the yard and kill all the queens." He extends his hands, which are peppered with stingers. "We keep four hives per pallet, with eight pallets per yard. By the time I've killed three or four queens, the pheromone attracts workers, which get in the way.

"I do everything I can to avoid crushing bees, but it still happens, and I still get stung."

Whitey uses smoke, but uses it lightly. This is to keep disruption to a minimum.

Whitey lets the queenless hive go two days before placing a queen cell between the bottom bars of the hive. "I get nine-day cells, and put them in on the 10th," he explains.

Twenty-one days later, Whitey and his sons, Larry and Scott, go back into the yard and look for brood. "By then the old queen's brood has hatched and we're able to see whether the new queen is working. Usually, we have a 90% success rate, but this year we're running 75%."

The empty cell is placed on top of the checked hive to clue them on their next visit. If it's in the middle of the top, there's a working queen inside. If they find no evidence of a working queen, the empty cell is placed on the edge of the lid. "Now I'm just a country boy, but it makes sense to let working bees alone," he says.

Whitey adds that at the time they kill the queen, all the brood is moved to the center of the hive for mite control. "Bees fly here almost every day. By keeping the brood in the center we avoid having mite problems. Mites have never been a problem," he knocks on the wooden counter, "But when Africanized bees arrive, well, we'll find something else to do.'

For the Beckners, the bee year actually begins in September when they start replacing all 1,500 queens. "We start September 15th and we try to be done by October 15th. It's too hot before September 15th, and we want the queen to fly before it's too cold. Once

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"Around here, a beekeeper must average 100 lbs. / hive to stay in business," says Whitey. Strong colonies with vigorous queens is the only way that can happen.

Larry Beckner, Whitey's son, gets ready to inspect colonies.

Whitey examining a colony before preparing for a move.

BECKNER ... Cont. from Page 267

mated, she'll lay eggs until December."

The queen then takes a two or three-week rest before resuming egg production in January.

"Now, we get ready to move bees to the Bakersfield, California area for almond pollination. In January I even up all the brood. Naturally, I'd like all nine frames full of brood, but if I have one hive with three frames and another with five frames, I'll take one from the five-framer and place it with the weaker hive."

This beekeeper doesn't even own a brush. "I give the frame a shake and all but three or four bees fall back into the hive. The new hive adopts the brood, and we go into the almonds with strong colonies."

Whitey and his sons work this phase through Larry White, a broker. "He handles the distribution of hives in the almonds. They stay there four or five weeks, letting us avoid the heavy pesticide season for alfalfa." Phoenix-area farmers get nine cuttings a year, and heavy spring spraying assures them of high quality hay.

After almonds comes orange blossoms for another month. "Our hives come back from the almonds heavier than they went, but not enough for extracting. Orange blossom is another matter; we have to check our medium supers every four or five days." That's when extraction begins, and doesn't quit until sometime in November.

In April, the Beckners move their hives out on the desert to take advantage of the fabled mesquite and catclaw honey. Both desert plants are nectar-rich, and produce a light, light premium honey prized by honey affecionados throughout the U.S.

"In June we're back for alfalfa. There's cotton, too, but we try to avoid cotton. It's a good producer but cotton farmers spray every four or five days. We lose 10 to 20% of our hives every year, even with all the care we take," Whitey explains.

Because he is a commercial beekeeper and wants to remain that way, Whitey contacts all aerial sprayers in the valley so he knows when to move hives. "We move a lot of bees in the summer. Pesticide people are good at contacting me. I talk with dusters and let them know there my hives are. The real trick is to stay away from cotton."

Later, during a visit to a yard for a queen check, Whitey motioned to a cotton field a quarter-mile away. "See, it's not always possible to avoid cotton in this valley." With his workboot, he scrapes through a pile of dead bees on he ground. "As I told you, cotton is hard on bees, which is why we do all we can to avoid placing yards near cotton."

The honey season ends in August. After that, they're busy extracting. "Our settling tanks are old milk tanks. We run hot water through the tubes that once held freon for keeping milk cold." This makes it possible for them to extract and settle 15 barrels per day, with one tank holding seven barrels and another holding eight. "We fill barrels full, rather than going for a standard weight," Whitey explains. "No sense sending out barrels not clear full." A recent 62-drum shipment averaged 657 pounds per drum. Annual production runs about 255 full drums.

The future is always on Whitey's mind. He'd like to retire and let Larry and Scott carry on. "But, I've been in bees all my life, and I reckon I'll keep on keeping bees," he concludes. □

ALL THE RIGHT STUFF

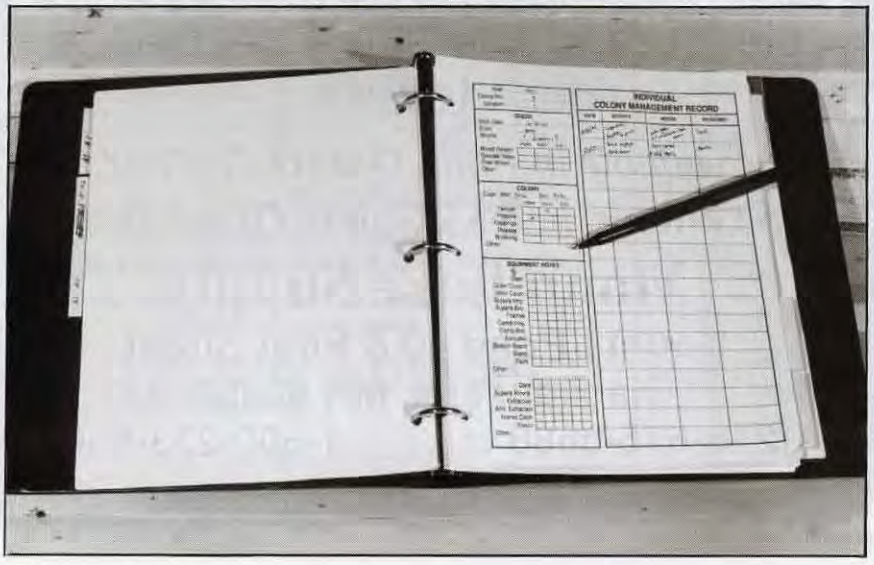
JEFFREY L. OTT

Does this sound at all familiar? You've had a hectic week at work. You feel as if your hives are being neglected and you have work you have to get done on them. The weather man says that Saturday will be warm and sunny and that Sunday it will rain. Your spouse reminds you of family commitments on Saturday (of course) but you figure that you'll have a two hour window that you can get to your hives. Saturday morning comes and you rush through the morning chores around home. Before anyone can say otherwise, you throw your bee gear into your truck (or car) and the two hour clock starts to tick.

You arrive 15 minutes later at your bee yard. You feel a bit rushed but that seems to be the norm any more. At last with your bees, you try to absorb the natural tranquillity of being out-of-doors, but it doesn't happen and you decide that it was a waste of time. Preparing to light your smoker, you find only one strand of burlap and you had to search to find *that* under the front seat. Undaunted, you grab twigs and a couple of nearby sumac antlers and toss them in the smoker. Now you can't seem to find your matches or even a lighter...

Everyone, whether they're a beekeeper or not, has experienced a day as the one described. Many beekeepers are feeling the crunch on the time they have available to spend with their bees.

Good records will save time next trip, a valuable resource for the weekend beekeeper. (photo by Joseph Ott)

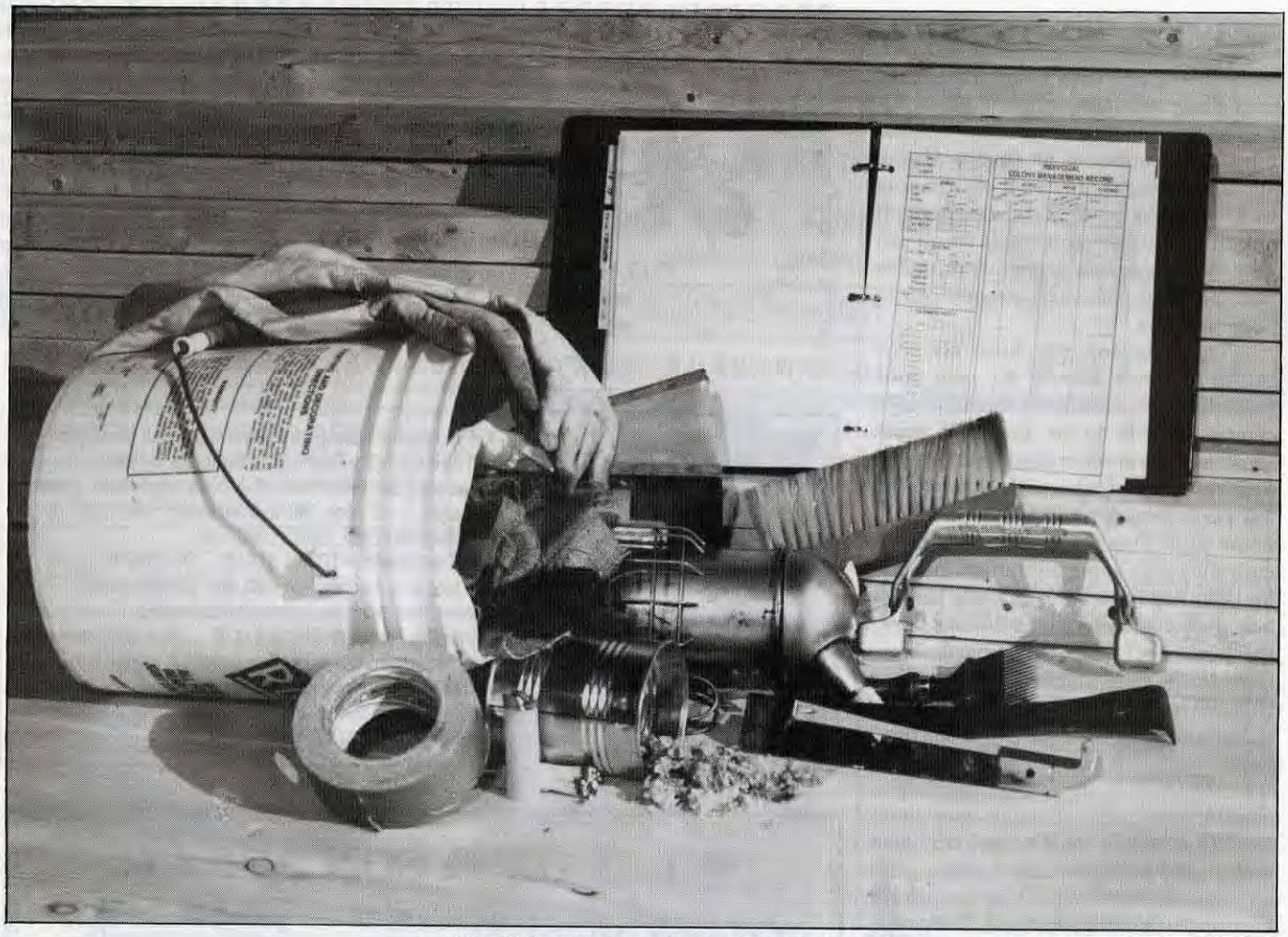


They wind up being 'Weekend Beekeepers' It's not bad. It's just the way it turns out. Adjustments in management style and techniques have to be made to accommodate the limited time.

Once you realize that you are working under a time gun, whether from family commitments, work or the weather, you can prepare yourself better. The first thing you can do is preplan your trip to the hives: Ask yourself, "Why am I going there?" Is it to reverse supers? Look for queen cells? Check for diseases? Or do you just want to poke around? No matter what your goal for the day may be, you can prepare for the trip and then make the most of it.

When you go to the bee yard, you don't want to make several trips back and forth your truck for equipment. You want to carry everything you may need in one hand and your smoker in the other. The best way to do this is to carry your equipment in something. Five gallon plastic buckets are great for this, mainly because they're easy to come by and they're free. Stop by any construction site and these things will be laying all around as trash. Pick one (or more) up, wash, and they're ready to use. Do not, however, use these buckets for honey containers. In these days of tainted honey scares, it would not be worth being the first beekeeper with traces of joint compound in his honey! That is not the kind of publicity you or the beekeeping industry needs!

Carrying your equipment this way does not take into account the need for



The All Purpose five gallon bucket with gloves, duct tape, smoker fuel, smoker, brush, frame grip, hive tools, matches, scratcher, wax can, first aid kit, and anything else you'll need. (photo by Joseph Ott)

empty supers, queen excluders, or other pieces of woodenware you occasionally need to work your bees. These can stay in your truck until needed. Everything else should be able to fit into the bucket.

Before you leave home, there is one item that is often overlooked, but shouldn't be. Let someone know where you are going and when to expect you back. If your spouse or roommate does not know the locations of your bee yard(s), then make sure you have a map *at home* with their locations marked. This way, if you need help, someone will know where to find you. It is insurance. You may never need it, but will be grateful if you do.

Another item you should prepare before you leave home is a first-aid kit. Don't worry about splints, but simple things such as bandages, first-aid tape, aspirin, and tweezers. Throw in a needle and thread kit too. This not for your skin, but your clothing. If you live in an area where you need to watch for poisonous snakes, you might even consider a snake bite kit.

Finally, I know of one beekeeper who always carries his bee sting kit in his car. He had a reaction once from 30 to 40 stings and his Doctor has persuaded him to carry this along. If you're allergic and you have been prescribed a bee sting kit, take it with you.

OK. It's May and you are preparing a trip tomorrow to a bee yard. You have a five gallon bucket and are ready to fill it. (I say bucket, but you may use something else. That's OK, it's the idea that counts). Let's deal with the basics first: Your bee suit and veil, smoker and hive tool. Inspect your equipment. Did you rip a hole in your veil last time? Patch it now. If you wear coveralls, you might consider washing them. Remember, you represent your product whenever you're in public. If you keep your appearance neat, people will not second guess the neatness of the rest of your operation. If you wear gloves, carry two sets: One you wear, the other can go in the bottom of your bucket.

There is not much to a smoker. Many beekeepers have their favorite one and have used it for years. However, you might consider carrying an extra one with you and leave it behind the seat, just in case. Hive tools are perennial. They're always dropped, lost and another one is bought. For that reason, carry at least two in your bucket.

Next, you need to consider smoker fuel. Every beekeeper has their favorite, but whatever yours is, carry plenty of it along with some paper to help start light it. Put all of this in a plastic bag to keep it dry and put it in the bucket. Some beekeepers use wooden kitchen matches while others use a lighter. Carry plenty of matches in a waterproof container (pill box, camping carrier or even wrapped in aluminum foil). If you use a lighter, carry two of them. Lighters are notorious for dying at the worst

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WEEKENDER ... Cont. From Page 271

times! Carry one with you and the other in the bag with the smoker fuel.

A worthwhile addition to the bucket is a container for the burr comb you'll scrape off. Instead of scraping this valuable (and tasty) product off onto the ground, put it into a small can with a lid, such as a peanut or coffee can. You can also carry second can to keep propolis.

The notebook you keep all your colony records should fit into your bucket. Some beekeepers consider their colony records to be the next most important item after their smoker, veil and hive tool to take with them to the bee yard. They review their records and notes while planning their trip to make sure they take along equipment needed for their next trip, such as a new bottom board, or cover. While at the bee yard, the beekeepers record their observations in the field and in the hive. All of this will help them later, when they are either planning the next trip or the next year.

Another item every beekeeper should carry with them is duct tape. Duct tape can be used to seal up holes and cracks to fashioning a make-shift entrance reducer to applying a quick fix to your truck's radiator hose. The possibilities are endless. This tape will go a long way and for a low price.

Finally, the last tool a beekeeper should carry with him or her is a knife. It does not have to be a 12 inch Bowie knife; a small pocket knife will do. If you don't already carry one, you will find that a knife has just about as many different uses as a hive tool. Just don't use your knife instead of the hive tool.

The list of tools and other useful items could go on. Equipment such as bee brushes, frame grips and a cappings scratcher for checking drone brood for varroa will all fit nicely into a bucket. You may not need everything in the bucket all the time. What you keep in it during the early Spring may be different from the middle of Summer. Keeping everything in the bucket, or other suitable container, keeps all your gear in one place instead of scattered about. All of this will enable you to make better use of limited time because you've learned to be prepared. □

Next month, what to do when vacations and honey flows overlap?

S • T • A • N • D AND BE COUNTED

There are only two reasons to keep honey bee colonies off the ground – one is to protect the hive's inhabitants from the dangers of things that eat bees; and the second is to protect the habitation itself from the ravages of nature and time.

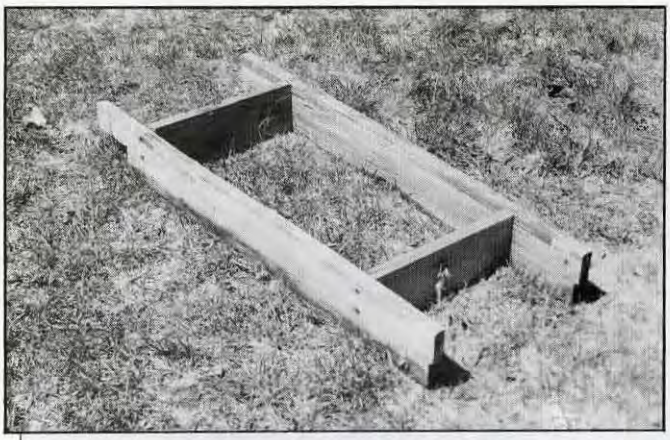
However, there are literally thousands of ways to keep your colonies high, dry and safe. Some work, some don't, some are expensive, complicated and permanent, while others are little more than temporary and transient.

We offer, this month, a dozen ways to save your bees and equipment from the dark, damp places colonies are too often put. So if you haven't already, or need to do more, stand and be counted, and check out these ways to save your bees, your bottoms (and maybe your bottom line).

The simplest and least expensive hive stand is only a couple of 2" x 6" boards lying on bricks, block or similar non-rottable supports. The cost is negligible and life, depending on whether you treat the planks or not, is anywhere from one five years, depending on climate and termites. The disadvantages are that it is low to the ground and not easily moved.

This design is similar but a bit more elaborate. Using discarded telephone poles (slightly flattened on top) and constructed supports. The advantages are that the poles will probably never succumb to weather or pests, and if treated neither will the supports. The disadvantages are obvious, though. Difficult (or maybe impossible) to move alone, or load in a truck, their portability is nonexistent. They're permanent.

The classic. Easily constructed with hammer, nails and miter box, this hive stand offers much. Easily moved, inexpensive, a built-in landing board and just the right size. However, it, too, is low to the ground and sitting hives on it's just-large-enough size offers problems.



Another standard. Made from doubled 2" x 4" stands, or 2" x 6" planks, this is made to hold two colonies side-by-side. Extremely cheap, it is nonetheless useful. A bit higher off the ground, if treated it will last long enough, and is easily transported.

These too, are not at all elaborate, and easy to construct. Made from cement block on the ground with wooden block above, and bottom boards on top of these. They are certainly easy to move. However, their very impermanence creates a problem. When setting a colony down, bumping one of the wooden blocks may present a problem. They should last years, and the parts are interchangeable.

These individually constructed hive stands are expensive to make and maintain, but their obvious advantages help make up for this. They are high enough that even when examining a single depth box you needn't bend over — a great back saver. Treated for rot and insects and painted to withstand the elements, these are easy to work with, and fun to work from.

In the "one man's garbage is another's treasure" category, Charlie Koover harvested this old T.V. stand. Fairly tall, it makes working easy on the back. The bricks keep it steady, and this one even swivels, making frame examination easy, no matter what time of day it is. It will also probably last longer than the beekeeper, especially if given a coat of rust-resistant paint. Easily moved, and stored, if you can find enough of these, they're ideal.

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Pipe is often used to make stands because it is durable, and available. These stands, with 'feet' and built-in bottom boards are well designed. They are sturdy, and if situated correctly will not tip. Moreover, they transport well, and you always have a bottom board, or you always have a stand. Initially expensive to construct (even if you have lots of pipe) they should last for years with minimum maintenance.

The tropics offer a whole different set of challenges, but here, too, pipe can work well. The most obvious advantage is its durability and strength. A single post, when mounted correctly, can support large colonies. This single post also offers only a single access point for predators. The disadvantage, of course, is that you don't move them easily, if at all.

Predators are very serious business in some parts of the world, and ants are chief among them. This simple stand rests in cans that contain oil, an (almost always) impenetrable barrier for ants to cross. This stand is easy to move, but maintenance is required.

Probably the ultimate in single post, oil barrier hive stands. This 'combination' technique works well in the tropics, as it allows easy placement of colonies along the top, yet keeps predators to a minimum. Since it is all wood, maintenance is required. It is not portable, but it does exactly what it is supposed to do.

Finally, these single post, permanently placed stands are exactly what the keeper (Steve Taber) wanted. Strong enough to hold a nuc, high enough so he didn't have to bend over to work, simple to build and inexpensive to make. For him, the 'perfect' hive stand.

Hive stands need to keep bees, and beehives off the ground to protect both from the elements. How you manage this depends on budget, time and management philosophy.

We've offered a dozen ways to rise to the occasion here, and by using one or more, you'll save your bottoms, and certainly help your bottom line. □

WEEDS Be Gone!

by one Older, but Wiser

It is said at the base of all economic wealth lies the ground we walk upon, and that all real assets eventually come back to real estate. Well, if that is true, then there is one thing that can detract from the glitter of the get-rich-quick real estate mind and that is what is on every piece of real estate I have ever had, and that is **WEEDS**. Weeds and more weeds. I have never found a good thing that did not first require the removal of a bunch of pesky weeds of one kind or another.

Well, beekeeping is no different than the real estate business. We, too, must face the inevitable weeds of life, both figuratively and in a very mundane, literal sense. Weeds – big ones, little ones, trailing one, clinging ones, ones that make your skin break out and some that make you sneeze. But worst of all, ones that plug up the entrances of your beehives and trip the incoming cargo bees trying to land with their heavy loads.

Weeds are the bane of beekeeping. My 33 years in this business have seen an evolution of weed control methods ranging from the all out attack with bare hands and hoe, to sneak attacks with herbicides. At one point, I had 60 different locations in three different states and every one of those 60 had a slightly different weed problem.

How do you meet weeds on a logical basis, when there is nothing logical about weeds in the least bit. As a teenager, my attacks were very frontal, in a literal sense. The first thing I would do coming into a bee yard was to pull weeds from in front of the beehives. By the time I was finished, my gloves or hands were slimy green with my enemies blood on them and I had worked up a sweat. Then I got the bright idea to bring a sugarbeet hoe with me to the bee yard. The flailing weed hatchet would kick up clouds of dust, I was just as tired, and the bees were twice as mean – maybe three times as mean. I then graduated to the marvels of a weed burner, which just clipped off the tops of the weeds, making sure I would have something to build up my biceps the next time I came. Sure enough, a new crop was always waiting for me. It was then I realized I was nothing more than a mowing machine and should benefit by at least feeding the grasses to the livestock. This led me to my next bright idea – staking a goat in the bee yard. Of all my bright ideas, this one was the worst. When I returned, it was clear all was not well by the bellow of the goat and the fact that several hives were lying on their side. Quick action let a bleating goat run to the pen kicking and spitting, and the weeds had won again.

Years went by with little improvement. I was laying down old boards; finding old shingles seemed to have promise, but then I had 60 bee locations to shingle and things got out of hand.

Coming home from graduate school, I had been exposed to the wonderful word of organic chemistry and was full of the realization that mankind had tamed the wild world with pesticides, herbicides, and all kinds of "cides". I heard a friend was using what the telephone company used. A marvelous thing called a soil sterilant. At long last I had arrived. With great anticipation, I went to a chemical company outlet and announced I wanted 100 pounds of Pramatol. They asked what I needed all that for, was I intending to exterminate the entire valley's weed crop? I just smiled in anticipation. Those damn weeds were finally going to get their just due.

Of course, you may say "Why kill

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> At the base of all economic wealth lies Real Estate. And on all Real Estate sit – WEEDS!

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the darn weeds?" Well, I do not know about your weeds, only my beloved weeds – the ones that cling to my ankles and cause me to stumble when trying to load a 100 pound super. The ones that cover my pant legs with Beggar Ticks, and it always seems that the bigger the honey crop, the taller the weeds and then there is June Grass. I really hate June Grass.

One year, I put my bees in a freshly plowed spot, at the bottom of Pettingill's apple orchard. He never told me he had just plowed under five acres of Burdock and I was in the middle of the mess. Along with the burrs that grew six feet tall, some other weeds moved in that averaged 10 feet tall. Between the Burdock and the monster weed, I lost the bee yard altogether. It was an August day when I came down the tractor path between the old apple trees, getting to the bottom of the orchard. I looked for my bee yard and was sure someone had stolen my bees. Not one single sign of a beehive. It was not until I had cut away the overgrowth that I found them. Now, get this. The hives were not singles, not doubles, but hives that were three to five stories, full depths high. It took my four wheel drive to smash down a landing pad so I could harvest the honey.

You see, weeds are not a figment of my imagination. So it was with a special curse under my breath and a smile on my lips that I spread the snow white Pramatol crystals on the weed studded ground. With every granule, I pictured a Morning Glory screaming for help and Johnson Grass falling dead flat on its face, crushing the small bodies of the June Grass, and all the trailing vines and burrs curling up into crisp brown strings that would snap under my feet. Such euphoria I had spreading my first 100 pounds and then the next 100 pounds and the next. That was the fastest $450 I ever spent, but I dreamed of clean bee yards and it seemed worthwhile. All went well the first year. It was wonderful. I was promised this would kill everything for seven wonderful years.

I must digress at this point because there is a danger here. My dad had seven beehives under the old Queen Ann Cherry tree and they had been there since the first day I ever had a beehive, and with the last of a bag I spread the white death in front of the beehives. That 80 year old cherry tree took the next four years to die a horrible death. So beware where you spread that stuff. Summer showers may also cause run off and the stuff dissolves and flows with the water where ever it goes.

But with few exceptions it was working fine until the second year when little tiny things were seen to be coming up, and bless my soul, I recognized the most hated of all – ragweed. I found out Ragweed took over in the third and fourth years and nothing else would grow. It could grow in the top one-half inch of soil where the herbicide had been leached out. Then something else became evident, at least to me. My bottoms and bottom boxes were rotting at a rate one hundred times faster than normal. I determined there were many things the specialists had not told me up front. I was, once again, reminded of the wonders of side effects of chemicals.

I then tried 2,4-D and Round Up,

Big ones, little ones, clinging ones and sticking ones. Weeds plug up entrances, and trip up bees, and make me itch and sneeze.

the new miracle cure for weeds. But it always was the same. What came back was worse than what I had killed. There was no end of labor in sight and the expense for use of chemicals was too much for my pocketbook.

At this point in my weed history, I went ecological and decided to go all natural. I would fight fire with fire. You know the basic principle of natural insect control, where you grow ladybugs to eat the aphids or praying mantis to eat the bugs. At any rate, natural control seemed to have some promise. I had tried everything else, so off to the Extension Service I went to pick their brains and get their recommendations. Creeping Red Fesque grass was the ultimate in natural weed control. It took over and you had this wonderful even grass lawn left, or so they said. That creeping part had me worried, but I bought 200 pounds of grass seed, for I was truly desperate.

This was the biggest fiasco of the lot. The year turned very dry, a drought not uncommon for the area where I keep my bees. The Extension had failed to tell me the new grass needed water at least once a week. My carpets of grass burned up and I was left with tufts here and there, just enough to remind me of what might have been.

I finally returned to the basic concept I had started with, but instead of the hoe, I bought a Skill Weed Eater, with a ten inch steel blade on it and a price tag of $400. I could cut small trees down if I wanted. This was not so bad. I would mow the locations in July and they would be ready for harvest time. It was paying someone to spend eight hours a day cutting the weeds down that got to my pocketbook.

It was about this time that I started using the wintering technique I'll describe in a month or two.

The plan uses straw, and the people who taught me the trick suggested I just burn what was left each spring. I had been in mortal combat with the weeds and at once grasped the idea to mulch them to death. To an extent, it worked, it was ecological, and with the twist of a hive tool, I could eliminate the few ragweeds that came up through the straw. This was a 100% improvement, and I was as happy as a bee in a yellow canola field.

But alas, there were problems. Wind blows straw, it gets too thick in spots, and may cause a fire hazard. Curse the day. This was another case where a little was good, but too much was not.

It was at this most desperate time in my beekeeping career I turned even more to the old methods that seemed to work back in my youth. I reevaluated them, and with a little modification, I struck pay dirt.

Carpeting. It was that simple. Wall to wall carpeting in a bee yard. It wouldn't cost a cent, except for the time to pick it up in my truck from whoever I could find to donate it. A trip to the dump produced a whole truck load and the wonderful thing was they were cut up in nice six foot wide strips. Soon my eye was trained to pick up the carpet layer's van and I was quick to make deals to haul away their old carpet.

I relocated my last yard 100 feet away from its old location. I moved away for a few months and then in the Fall moved back into a beautiful yard with carpet totally under every pallet, in front of every hive, and in back of every hive. It was wonderful. The war was over, the bees had won, and the beekeeper did not have to fight for survival anymore. One other added advantage – it is soft to walk on and my old knees, old hips and feet are appreciating the soft cushion that lies at my feet. The first year after it is put down, the sun bleaches it and it melts into the ground. You hardly notice. It is truly wonderful and ecological. It has been 10 years now since I laid my first carpet in a beeyard. In another ten years, I'll have to put another layer down.

Yes, at the base of all economic wealth is real estate. But on top of all real estate there are weeds, and the ground is not worth much until someone gets rid of those pesky, awful in-the-way weeds. □

STOP THOSE SWARMS

ROGER MORSE

"The one essential in beekeeping is results. In this practical age the aim of every progressive beekeeper is to obtain the greatest results with the least expenditure of time and labor." Those words were the introduction to an interesting 21 page booklet entitled *A Radical Cure for the Swarming Habit of Bees* written in 1909 by Henry Jones of Preston, Minnesota.

Jones' method was to open a mammoth hive at the time the honey flow was starting and "uncap all the sealed brood you find except for two frames of the sealed brood in each hive which you leave undisturbed." Jones reports that having done so the bees would quickly remove the "headless brood" The bees will polish the cells and the queen will lay in them.

I have never tried Jones' method of swarm prevention but I have no doubt that it will work. It is but one of many swarm prevention methods that beekeepers have used successfully during the past 100 years. The chief criticism I hear of the Jones' system is that it is a great waste of bees but equally important, it takes too much time, five to ten minutes per hive according to Jones.

Good Rules While the above is interesting, we know enough about swarm prevention to take simpler and easier steps. Insofar as is practical, it is far better to manipulate supers instead of individual combs. In thinking about swarm prevention we find that two facts are more important than all others. First, the primary cause of swarming is congestion of the brood nest; congestion must be relieved to prevent swarming. Second, two year old queens are twice as likely to swarm as are those one year old; beekeepers should use young queens.

> "The primary cause of all swarming is – congestion in the brood nest"

In practical honey production, while the above are paramount, a third factor is important—bees must have ample space to store honey. A fourth fact that is well-known among successful beekeepers is that one should grow bees *for* the honey flow, not *on* the honey flow. It is the bees that emerge from their cells one to four weeks before the honey flow starts that will gather the crop.

With these thoughts in mind, let's review some of the guidelines one should follow to produce the maximum crop. A beekeeper must know two facts about honey production in his or her area. First, when does the chief honey flow start? Second, when does swarming occur? Across the northern tier of states, from Massachusetts to Oregon and Washington, the chief honey plant is the small white clover, sometimes called white dutch clover. It, alsike clover, and white sweet clover, are responsible for about 40 percent of the honey produced in the U.S. These clovers start to bloom between the middle of June and the first of July.

In the northern tier of states, swarming starts about May 15, peaks about June 15 and for the most part is finished by July 15. Beekeepers in other parts of the country whose chief flow is other than the clovers, will need to determine the different dates for their area in order to establish a practical management scheme.

Congestion Since congestion of the brood nest is the chief cause of swarming, the beekeeper should always make certain that the bees have room for the upward expansion of their brood nests. Bees do not care to move their brood nest sideways; it is for this reason that long hives, those with more than nine or ten parallel combs, are a bad idea and do not work well in honey production.

To determine the degree of congestion in a colony, the brood nest is split apart and the beekeeper checks for cups and queen cells along the bottom bars of the upper super.

Assuming one uses 10-frame hives, the most popular, and least time-consuming method of relieving congestion, is to reverse the positions of the two supers where the brood nest is located. Most beekeepers overwinter their colonies in two supers. At the beginning of the swarming season, if the colonies are strong, the topmost super is placed on the bottomboard and the bottom super on top. This technique splits the brood nest into two parts. It can be dangerous if it is done too early and at a time when the bees cannot keep both parts warm. The easiest way to determine when the brood nest is congested is to split the two supers apart and examine the bottombars of the top super for queen cups. When cups are present in numbers, usually 20 or more, or when one finds the first egg in a cup, reversing is necessary. At the same time, one may add a super of empty combs. Knowing when to reverse, and when to add a super of combs, is an art. I can write about it and describe the circumstances but it is only hands-on experience that will give a beekeeper the real knowledge needed for successful honey production. No two colonies are alike anymore than two people are the same.

Honey-Bound Honey bees make a compact brood nest, that is, they do not scatter their eggs, larvae and pupae around the nest the way in which some insects do. The brood nest is kept together. It is the shape of a ball though sometimes that ball is oblong, like a football. The reason a broodnest is this shape is that the bees can most easily surround and keep it warm on cool nights. It is important to remember that honey bees maintain a brood rearing temperature of about 94 degrees F. It is not always easy for them to do this. I hasten to emphasize that bees do not keep the whole of the interior of the hive warm; they cluster around and keep only the brood itself protected.

If there is honey above the brood, that is between the brood and the super above, the queen will not move upward and across the honey to lay eggs. This is called a *honey bound condition.* A queen deposits eggs next to brood, not some distance from it. It is for this reason that frames more than about nine and one eighth inches deep, the size of a standard Langstroth frame, are not good. When one has deeper frames, too often there is honey above the brood in the same frame. When the beekeeper has deep frames there is no way of splitting or breaking the brood nest apart and the queen cannot move upward. At this point, it is well to emphasize that bees are not domesticated animals; beekeeping is applied insect behavior.

A variation on the above method is to add a super of empty combs and raise a frame of brood from the edge of the brood nest into the empty super just above the center of the brood nest below. This is called "spreading the brood" It will force the queen to move the brood nest upward and into uncongested space. One may move a full frame of brood upwards in this manner but it is just as effective, and less dangerous, to move a frame containing only a few square inches of brood. It is important to emphasize that spreading the brood can be dangerous if it is done too early and at a time the bees cannot keep all of the brood warm. This again is part of the art of beekeeping.

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SWARMS ... Cont. From Page 283

Young Queens A study done in England, which involved observations on several hundred colonies over a period of three years, showed that colonies with two year old queens are much more likely to swarm than are those with one year old queens. We believe this has to do with the body chemistry of the queen. Queens inhibit their own replacement. They do so by producing chemical substances that inhibit workers from growing queen cells. We presume young queens are better in this regard because they produce more of the chemical substance needed to inhibit their replacement. The moral is simple, in addition to relieving congestion with some swarm prevention technique one should also make certain young queens are present.

Caging Another old-time favorite for swarm prevention is to cage the queen just before or at the beginning of the honey flow. She is usually released about two weeks later. Since worker bees are in the egg stage for three days, and in the larval stage for six days, the nurse bees that are usually needed to feed the brood can turn their efforts to nectar gathering and ripening after the queen has been caged for nine days. Some of the nurses, of course, will be relieved of this duty earlier. I think many beekeepers would use this method if finding queens in large colonies was easier.

The Aspenwall's A bad idea for swarm prevention that was advertised and sold widely, starting in 1974, was the "no-swarm cluster frame". This is a plastic device, about three eights of an inch wide, which one places between the brood frames. It gives the bees extra clustering space between each brood frame. The frame is based on an idea outlined by L. A. Aspinwall in a 1906 issue of *Gleanings in Bee Culture.* Both the original frames, which were made of wood, and the 1970's version, stop most swarming. They do so because the brood is spread over a larger area. Since the bees can not keep this whole area warm, they produce less brood and as a result there is less congestion. The colonies never become as strong and do not produce as much honey as a well managed colony. Because these frames spread the brood they are a bad idea. However, if colonies are not properly managed and swarm, then the no-swarm cluster frames do no harm.

Jones' Method From the above discussion it is possible to understand why Henry Jones' method prevents swarming, however objectionable it might be to uncap and kill brood. Jones relieved congestion. He gave the queen space in which to lay eggs. At the same time he got rid of some of the brood that was being reared on the honey flow. Most of that brood would hatch too late to make bees that would be foragers. I can't remember anyone writing, speaking, or otherwise advocating the Jones' method. It is there in the literature as one of those oddments of apiculture.

> "Provide room, and keep ahead of the bees' tendency to swarm."

Prevention Vs. Control Once colonies have congested brood nests, and queen cells are produced, strong measures must be taken to prevent their swarming. This process is called swarm control versus swarm prevention. To control swarming once the queen cells have two or three day old larvae, a beekeeper must do one of three things: remove the queen, remove the brood, or separate the brood and queen. Caging the queen under these circumstances may not always work as the bees may sense her presence and with brood hatching the stimulus for swarming continues. Removing all the brood will relieve congestion rapidly as no new bees are being added to the colony.

The most drastic, and time-consuming technique is to place the queen, with a few square inches of brood in one comb, in a super on the bottomboard. She is confined there with a queen excluder above the first super. Two supers with empty combs are placed above this super and the brood is placed in a super on the top. This is called the Demaree method of swarm control and was described in 1884 in the *American Bee Journal.* The Demaree method of swarm control is an excellent one but too time-consuming for most beekeepers to use. One problem is that the bees that are in the top super with the brood are too far from the queen to know she is present. They will usually attempt to rear a queen and this can be stopped only if one cuts out the queen cells, another task that takes time.

The chief lesson to learn from this discussion is that one should always provide plenty of room and keep ahead of the bees' efforts make to swarm.

Harvesting Near the end of the swarming season, one may drive the bees and their queen down into the bottom one or two supers. This is done with a combination of smoking and a bee repellent. The queen is confined there with a queen excluder. The brood above the queen excluder will hatch in 24 days or less and the supers may then be removed and the honey extracted. Even though this procedure congests the colony, it does so at a time when swarming will not usually occur and thus there is no danger in this method.

Summary

In this paper I have discussed only a few methods that have been described for swarm prevention and swarm control. The important issues are simple to describe. However, swarm prevention is an art that is usually acquired only after many years of experience in managing bees. If one is interested in maximizing the crop, then swarm prevention methods must be applied in advance of queen cell production. Timing, as always, is critical. □

THE INCREDIBLE, EDIBLE G·A·R·D·E·N

Growing Food For You And Bees

B. A. STRINGER

The fittest place for bees is that which is in a garden,
not farre or rather neare to the owner's house,
which by that means suffereth not the winds,
nor accesse of thieves or beastes.

Thomas Hyll

An overwhelming majority of *Bee Culture* readers grow a food garden. Nearly 80%, according to a recent survey, are interested in the plants which feed their bees. Now you can plant an edible garden for yourself *and* your bees, and provide fruit, vegetables, flowers and bee forage. One of the most attractive aspects of combining gardening and beekeeping is the eminent watchability of bees amidst the flowers. The beekeeper-gardener spends pleasant hours observing while bees pollinate those fruits and vegetables supplying nectar and pollen.

Look at your garden as if it were a supermarket for bees: are nectar and pollen "in stock" all the time? A constant supply of floral nectar and pollen will keep bees coming back to your garden continuously. Keep in mind that even a garden's worth of flowers will not contribute significantly to your honey crop. However, you can help your bees through some lean forage times, and also increase your bee-watching opportunities by planting with bees in mind.

There are several ways to increase the attractiveness of your garden to honey bees. Grouped or massed plantings draw more bees than single or isolated specimens, probably because the flowers are easier for bees to locate and more efficiently worked in a high floral density. Plan for a succession of bloom too, so food sources are available through the season. You may let some of your vegetables "go to seed", instead of consigning them to the compost pile when you haven't time to harvest them. Turn a lack of time on your part into a benefit for bees by allowing the plants to bloom.

Trees are especially valuable to honey bees because they furnish three-dimensional forage with high floral density. Fruit trees support a multitude of nectar and pollen producing blossoms over a week to ten days for each species.

Give plants optimum growing conditions; adequate sun and moisture, fertile soil and not too much competition. Add compost or soil amendments as necessary to ensure a continuous supply of nutrients to plants. Plants have to eat, too, if they are to provide food for the table and the hive.

Cherry Trees are good for bees in the spring, and birds later, unless you're fast enough to get there first. (Lovell photo)

T • R • E • E • S

Consider including some fruit trees in your garden, as even small areas can accommodate productive dwarf or miniature trees. Your climate may limit growing some fruits, but there are varieties bred for hot or cold areas, and short seasons. Ask your local nursery or County Extension Service for advice on varieties suited to your area.

The fruit display in your grocery store is made up of many honey bee pollinated fruits which taste even better when picked from your own backyard tree that also provide nectar and pollen for your bees. Among the fruits commonly grown are apples, cherries, pears, peaches, apricots and plums. Those in

warmer regions might also try citrus and almonds. Almonds and apricots bloom quite early and, weather permitting, may be valuable food sources for spring bees. Plums and prunes are very well worked by bees, as their nectar is high in sugars and copiously produced even at lower temperatures. Cherry bloom often overlaps apple blossom time, providing nearly a month of flowers for bees to work. Most of the blossom forage goes into colony brood-rearing, so the blooms that lift your spirits in spring also boost the strength of the beehive.

B • U • S • H • E • S

Easy to fit into any garden, bush fruits bear heavily for their small size. Early blooming gooseberries and currants will be sought after by bees on the warm flight days of spring.

Golden Rain Tree. A hardy street tree and ornamental. Summer flowers, and decorative fall seed pods make this a very desirable addition to the urban landscape. (Lovell photo)

Jams, jellies and pies can be made from the tasty berry crop. Blueberries, once established, need little care and will return their rent of space in handfuls of succulent berries. The bush fruit blooms contribute both nectar and pollen to a hive's stores in the unsettled weather as spring moves in.

B • R • A • M • B • L • E • S

Trained on a fence or trellis, raspberries, blackberries, and their relatives loganberries and boysenberries, are assets to any garden. Their abundant white flowers are always abuzz with bees collecting the high-sugar nectar and plentiful pollen. Oregon's raspberry honey, gathered from commercial acreage, is considered one of the worlds finest varieties. It is very light in color and has a delicious flavor and aroma. The addition of nectar from bramble fruits to your bees' surplus will improve their harvest. Look for the newer thornless varieties of these fruits which make picking a much less prickly proposition.

V • I • N • E • S

Try planting some watermelons and cantaloupes this year as their flowers can feed your bees while their fruits will delight your own palate. There are melons to suit anyone:

Apple trees and dandelions. A veritible smogasbord for bees and their keepers. (File photo)

Currents, if you get to them before birds and such, make good eating right off the bush, excellent jam and a handsome addition to any backyard. (USDA photo)

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short season, small fruit, super sweet, extra large, bush-type or vining. Each plant bears both male and female flowers separated on the vine and cross-pollination is essential for fruit formation. Seedlings are often available at nurseries in spring, and should be planted out after the last frost. Alternatively you can start your own plants from seed either directly in the garden in warmer areas or in pots for transplanting in the north. Invite your bees to an early summer lunch and enjoy superb melons as a reward later!

The squashes are worth squeezing into your garden. Once again, a wide variety offers something for everyone, and the bees will be pleased with whatever you choose. Select bush varieties or train vines to a trellis if you have limited garden space. Squash, like melons, have male (pollen bearing) and female (fruit forming) flowers separated on the same plant. Honey bees are important in transferring pollen to the female flowers, effecting pollination and in the process gathering nectar and pollen for the hive. The pollinated flowers grow into fruit, while those flowers not pollinated wither and drop off. Your profusion of zucchini, pattypan, and crooknecks each summer is a testament to good pollination. Your bees have a food source, then you (and your entire neighborhood) reap the harvest.

Winter squash (e.g. Acorn, butternut), vegetable spaghettis, and pumpkins also rely on pollination for their fruit formation. Pumpkins are good to eat in a pie or as a vegetable or a seed snack, but some have been bred for Jack-O-Lantern carving rather than for flavor, so know the seed variety before you plant. They range in size from tiny to gigantic, from compact bushes to running vines. With good pollination and favorable growing conditions, a few plants can be very prolific.

Cucumbers are a favorite in home gardens. There is a large selection available in the seed catalogues and at transplant nurseries. These plants are frost-tender and should be planted when the soil warms in the spring, or given protection with row covers or hot caps. Like squash and pumpkin, the flowers of cucumbers must be cross-pollinated to grow into fruit, and honey bees do this task well. The small yellow flowers do not produce much nectar or pollen, but are still visited by honey bees and other insects. The gardener then delights in the crop of picklers and slicers. The vines can be trained to climb trellises or nets if space is limited.

R • U • N • N • E • R B • E • A • N • S

Have you ever grown scarlet runner beans? The brilliant flowers attract honey bees, bumblebees and hummingbirds, and the vines are pretty enough for the ornamental garden. To top it off, the beans themselves are excellent eating. Whether it is considered an ornamental or a vegetable, this versatile plant is a useful and beautiful addition to your garden. Most other beans do not attract bees, but the Fava Bean (Broad Bean) is a notable exception. Often used as an overwintering crop on heavy soils in the northwest, Fava Beans fix twice as much nitrogen as do clovers. The fragrant flowers supply both nectar and pollen and are visited by honey bees and bumble bees. The beans themselves may be eaten green or allowed to fully mature on the vine and then used dry.

C • O • R • N & G • R • A • S • S

Many beekeepers have noticed honey bees gathering pollen from sweet corn. This plant is designed for wind-pollination and produces copious pollen shed from anthers atop the stalk. Pollen filters down to tassels protruding from the developing ear. After pollination, the tassels dry up and kernels, or fruits, swell and mature. Wind-pollinated plants tend to have lower quality pollen than plants needing insect pollination, but honey bees are opportunists and will gather pollen whenever they find it, regardless of its nutritional value. Sweet corn, popcorn and even grasses may be worked for pollen especially if little else is blooming at the time. While these plants are not pollinated by bees, the pollen snack they offer bees does not impair the quality of the succulent plump ears fresh from the garden.

S • U • N • F • L • O • W • E • R • S

The sunflower, because of its many uses, has a place in every garden. It has a beautiful bright face and is an excellent source of nectar and pollen over a long bloom period. After the flowers have faded, the seeds are a treat for the birds or the gardener, depending on who gets there first. If you haven't room for the huge, tall sunflowers, look for the compact kinds which grow only two feet tall and yet bear large 10" heads.

Jerusalem artichokes, also called "sun-chokes", are closely related to sunflowers. Their tubers are crisp and nut-flavored, their sunflower-like blooms are worked by bees for nectar and pollen and the seeds are relished by birds. Fast-growing, these perennials may be placed for a temporary hedge in limited areas, but be aware that they spread quickly from the tubers and may become a pest. The best solution is to enjoy the flowers with the bees and the birds, eat most of the tubers, and replant a few each year to propagate the plants!

S • E • E • D • S

Garden seeds from the store, while available in a large number of varieties, may not suit your particular garden site, your pocketbook, or your preference. Many seeds now sold are hybrids, with the associated "hybrid vigor" evident in the plants. Often the true flavor of the fruit or vegetable loses out to appearance, disease resistance and uniformity. Hybrids have commercial benefits in that they all ripen at once and are therefore easy to harvest. Over the past few years, a resurgent interest in heirloom and open pollinated varieties has led to the formation of seed exchanges and catalogues specializing in the older, open pollinated seed types. Open pollinated means that you can save the seeds and grow the same variety next year from your own seed. Hybrid plants will not come true from the seed they set.

The brassica group of vegetables provides the gardener with some menu mainstays such as broccoli, cabbage, cauliflower, brussels sprouts and kohlrabi. Those plants not used for the table may be left to bolt, or flower, during which time they attract a constant court of honey bees. Brassicas produce abundant pollen and contain over 50% sugars in the nectar. Most of these vegetables grow best in spring and fall,

Pears are not on most bees' Top 10 List of favorite places to visit. But they will if little else is around. (File photo)

because the high heat of summer often triggers bolting. Plan on letting some plants flower even if you don't want to save the seed; bees will work the flowers diligently.

Root vegetables also flower if left in the ground long enough. Some, such as radishes, mature quickly and complete their flowering in a short time. Who hasn't over-planted those round little seeds, and then been overwhelmed by the sudden flourish of radishes? These delicately scented flowers are very attractive to bees for both nectar and pollen.

Other root vegetables, like carrots and parsnips, are biennials: they grow their overwintering 'root' one season, which produced, in turn, a flower-bearing plant the next. In mild climates these vegetables may be left in the ground over winter, after which they will sprout and flower the next spring. Nectar and pollen are produced by the flat lacy heads, or umbels, of flowers. Commercial carrot pollination often provides a surplus of dark, strongly flavored honey which is sold for the bakery trade or used as colony winter feed. Celery, another umbelliferous biennial, is a source of abundant nectar but little pollen when left to bloom. While these plants take two years before you collect their seed, you will be able to ensure pollination of open-pollinated varieties using your own bees.

The skyblue daisy-like flowers of chicory and endive are ornamental enough for the flower garden, and are favorites of honey bees. Young leaves of chicory and endive are used in salads, and chicory root may be dried and ground to use like coffee. Allowing these plants to bloom brings a little of the summer sky down into your garden and definitely attracts bees.

Asparagus shoots are generally picked early in spring, then the later spears are allowed to grow to produce food for the plant. These asparagus ferns may also be used in floral arrangements. Both honey bees and bumble bees visit asparagus flowers where female (berry producing) and male (pollen producing) flowers are on separate plants. Some nurseries now sell "all male" plants which "don't waste energy by producing seeds" and supposedly produce huge spears. If you have room in your garden, a bed of asparagus could supply you and your bees with food as well as providing some stems of greenery for floral art.

Globe artichokes are expensive in stores, but you can eat all you want fresh from the garden if you grow a few of these perennial plants. They become large and distinctly thistle-like with silver foliage and spectacular flowers. The flower buds are the edible parts, and if you eat them all, of course you leave no flowers for the bees. Consider allowing some of the buds to mature into huge blue-purple flowers which are well-visited by honey bees.

Let's look at the alliums in your garden. Onions, garlic, chives and leeks are valuable culinary assets which are easily grown in most soils. Allow some of these to bloom for watching bees work the large floral balls. A leek flower head may contain over 2000 individual florets, each a source of nectar and pollen. The flowers open gradually, and the large

The sky-blue borage flowers are a delicate treat for bees almost all summer long. (Flottum photo)

heads attract bees for two – three weeks. If you save seed, you'll certainly get good pollination, as there are always bees on the flowers.

Finally, in the seed-saving section, remember that cross-pollination is necessary for squash and pumpkins, melons and cucumbers, as noted earlier. Make you own pumpkin seed snacks or dry and store seeds for next year's garden.

Continued on Next Page

Globe Thistles are good to look at, and good to visit. (Sammataro photo)

H • E • R • B • S

Another area of the garden open for eating enjoyment to both bee and thee is the herb garden. Most of the basic culinary herbs thrive under cultivation and it's easy to plant more than you need to allow for the bees' floral feast.

Herbs for cooking are frequently picked when their oil content is highest and flavor is at a peak. Unfortunately, this occurs just before bloom, so commercial crops of mint and other herbs are harvested before they become useful to bees. However, in the home garden you have more latitude in deciding how much and when to pick, and may select herbs on an "as needed" basis.

Chives are ideal window box herbs, always close at hand and needing little maintenance. Plant some clumps from divisions into the garden and watch the bees on their purple pompom flowers. Like their onion relatives, chives supply both nectar and pollen in their flowers. Use scissors to cut bunches of leaves at any time.

Parsley, a biennial umbel related to carrots, responds well to repeated light picking of the leaves. Because they will flower in their second year, grow new plants each spring, allowing the older plants to flower and reseed in the garden. In good soil, parsley seeds will resprout in abundance.

Chervil, a common salad herb, can be maintained for periodic picking of the leaves by clipping off the flower buds. With bee forage in mind, a better idea is to make successive sowings of the seeds, use the leaves until buds appear, and then allow the plants to flower. By this time, the next sowing will have grown big enough to harvest. Other annual herbs which are best sown in successive batches include sweet basil and summer savory. Bee visits to the flowers will enhance seed set, and many of the herbs will volunteer the following year.

Seeds as well as leaves can be eaten from some herbs providing bee forage in their flowers. Young leaves of dill, coriander (cilantro), anise and fennel may be used in salads. During bloom the bees work the flowers, contributing to a good seed harvest for the gardener's condiment collection. These plants will also self-seed in the garden each year. Dill, coriander and anise are annuals, sprouting from seed each year, while fennel regrows from a perennial root.

Caraway plants produce flowers and seeds in their second year of growth. Bees in the garden will produce adequate seed set from a few plants to ensure enough caraway seed for flavoring a year's worth of rye bread baking, pickles and cookies. Because flowering and seed set occur biennially, plant caraway every year to ensure a seed harvest each fall.

Perennials are the mainstay of a herb or kitchen garden. Where would we be without sage, oregano, rosemary and thyme in our selection of seasonings? Think of the huge number of mint varieties (spearmint, peppermint, pineapple, lime, orange, apple, to name a few) that contribute to the herbal tea pantry. These easy-care perennial herbs are also honey bee favorites. They generally grow with sufficient vigour to provide an abundant leafy harvest for the gardener and a profusion of blooms for the bees. Highest quality herb leaves are picked just prior to bloom, preferably in the cool of morning to preserve maximum flavor. Use them fresh, or dry the leaves away from direct light and store them cool in an airtight container. While you preserve the leaves of summer, your bees are also extracting the essence of the season from the flowers for their own stores. In the dark of winter, as you sip herbal tea sweetened with honey, you may reflect upon growing your garden for yourself and your bees, and eating it too!

W • I • L • D T • H • I • N • G

Finally, in this multipurpose garden, let's take a walk on the wild side and look at weeds. Any gardener who keeps bees also casts a slightly more lenient eye on weeds than does the show gardener. After all, many cultivated plants are regarded as weeds if they don't happen to grow in the right place. Garden vegetables are usually the products of many years' selection and breeding for prized edible qualities. From the wild, or escaped to the wild are such plants as asparagus, chicory, fennel, mint and wild carrot. Their flowers are also useful to honey bees.

Cast a culinary eye toward dandelions and chickweed, common guests in a garden, before descending with the hoe. Consider the value of these plants to bees and the potential salad greens they present to you. Pick the young shoots of these weeds for a spring salad, and appreciate the pollen and high-sugar nectar their flowers offer bees early in the season. If these weeds are altogether too successful in your garden, try picking the spent flowers to prevent reseeding.

You only need to plant borage once, after which it will volunteer every year; a prolific and productive plant regarded as a weed by some. Leaves will cool summer drinks and the starry blue flowers are edible garnish for salads. From borage, bees gather nectar and whitish pollen, even after a summer shower, as the nodding flowers are protected from moisture.

Plan and plant your garden this year with both bees and you in mind. The rewards for the bees are a little more food. But for you awaits hours and hours of just watching, lots and lots of good things to harvest, and much left behind for next year's Edible Garden.

In your garden, it's easy to grow plants which are palatable to people and beneficial to bees. Your local plant nurseries, public library and University Extension Service are good sources of more information. Seed catalogues of the major seed companies contain intimate details of the plants they offer, along with photographs and cultural hints. A few sources for harder to find seeds are listed below.

Open Pollinated Seeds
Abundant Life Seed Foundation
P.O. Box 722
Port Townsend, WA 98368

Seed Saver's Exchange
c/o Whealy
Rt. 2
Princeton, MO 64673

Herbs
Nichols Garden Nursery: Herbs and Rare Seeds
1190 N. Pacific Hwy.
Albany, OR 97321

Unusual Varieties
Thompson & Morgan, Inc.
P.O.Box 1308
Jackson, NJ 08527

HOW TO DO A NEWS RELEASE

Below is an example of a news release we recommend you or your group use as the gardening season gets started. With the increased awareness the public has of honey bees and beekeeping, an informational release like this will go a long way in making sure people know how important honey bees, and beekeepers, are to the everyday pleasure, and everyday harvest a backyard garden can bring.

At the bottom, note the information on contacting you, or your association, how to become a member, when and where you meet and all the rest. Make sure you make it easy for people to find you. Change, modify or rewrite what doesn't fit or what you don't need in *your* situation.

And, don't expect anybody else to do this. Write it up and you send it into to your local newspaper, T.V. station or wherever.

News Release

GARDENING AND HONEY BEES

Gardening season has arrivedwith a rush again this year, and the (name) beekeepers association wants to remind all area gardeners of the importance and relationship of vegetable and fruit pollination, and honey bees.

(Name), President of the Association offers a list of those garden vegetables, and common fruit trees and bushes that need or benefit from honey bee visitation —

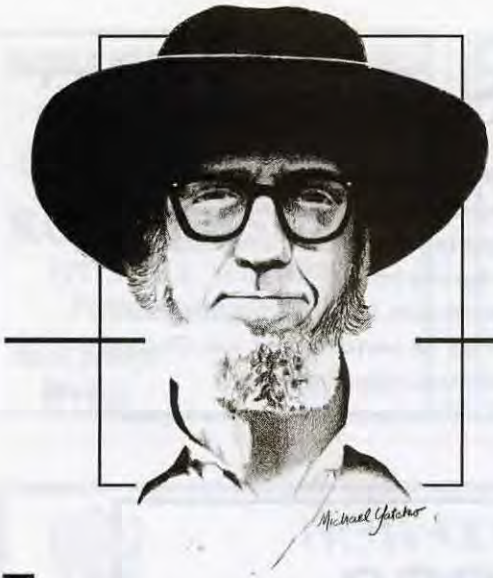
Trees	Bushes	Vegetables
Apples	Blueberries	Squash
Cherries	Cranberries	Pumpkins
Peaches	Currents	Melons
Plums	Gooseberries	Cukes
Almonds	Raspberries	Eggplants

(Name) says that without honey bees, these plants would produce *no* fruit, or there would be far fewer to harvest, and they would be smaller, misshapen and less desirable.

He goes on to say that because honey bees are so vitally important to food production, gardeners should exercise care when applying chemicals to control garden diseases and pests to reduce their exposure to honey bees.

The (Association name) meets each month at the (Place). Any and everyone is welcome. There is no charge, and we always have refreshments. Oh yes, pollination is always a topic of conversation.

For more information on the (name) Beekeepers Association, honey bees, beekeeping or even gardening, contact (name), (Phone number), or (name) at (Phone number). Honey Bees *and* Gardeners make good sense.



BEE TALK

RICHARD TAYLOR

Box 352, Interlaken, NY 14847

"An Observation Hive is the most valuable and wonderful tool a beekeeper can use."

I had a note from the Editor suggesting I write something poetic to celebrate the advent of spring, and hinting, without actually saying outright, that he might give me a raise. Well, I haven't written any poems since I was in ninth grade, composing tender verses for Irma Jean, who sat a couple rows in front of me, but I poured myself a little glass of red wine and waited for poetic inspiration. It soon came, with the following result:

The beautiful springtime has come at last
And soon our hives their swarms will cast.
On these days so serene
It's about time to requeen
And rejoice that the winter is past!

That came out so well that perhaps I should consider converting these bee talks to a poetry page each month. It depends, I suppose, on whether the Editor thinks I have earned a raise.

Meanwhile, I want to talk about observation hives. I don't recall that I have ever done that. I've always been fascinated by observation hives, and of course have made plenty of mistakes with them, so perhaps I can save others from making similar mistakes.

An observation hive is the most valuable tool one can find for the scientific study of honey bees, but that is not their chief interest for most beekeepers, nor was it ever mine. It is, simply, something that is engrossing to watch. And the bees are wonderfully cooperative. The glass sides are normally kept covered, but the bees do not, as one might expect, scurry about in panic when suddenly exposed to light. They just keep on doing whatever they were doing in the normal and natural darkness. The impression you get, watching them, is one of aimless, random behavior, bees merely crawling about to no particular purpose. But of course that is a mistake. Beneath that appearance is a most wonderfully organized and structured behavior, and an elaborate division of labor, the complexity of which is probably still not fully understood. You get an inkling of this when you see the comb begin to appear, with its almost perfect and geometrically precise cells, all constructed according to very exact principles. You sense it again when you see the pattern of eggs, larvae, sealed brood and so on. The queen, like the rest of the bees, seems to be simply wandering around, and laying eggs here and there, but when you see the resulting pattern you realize that she knew exactly what she was doing, and was heeding rigorous standards of efficiency.

The most common mistake of beekeepers undertaking to make their own observation hives is to make big, multi-frame ones, the idea being to get one that can house a large, almost normal-size colony. The standard observation hive has but one frame or, more often, one and a half or two frames, one above the other, so the population of such a hive must of necessity be very small, too small for the colony to sustain itself without supplementary feeding.

Of course an observation hive is nearly worthless if not all the comb surfaces are exposed to clear view, for the queen will in that case confine herself to inner surfaces, out of sight. So the beekeeper is apt to make a very tall observation hive, six or more frames high, so as to get more bees into it but still have all the comb surfaces in clear view. The trouble is, the bees in that case pretty much confine themselves to the lower two or three combs, so the hive is no improvement at all. One very clever beekeeper I knew, long ago, made an elaborate observation hive of ten frames, which fanned out from a center like the spokes of a wheel, and was only two-frames deep. He thus had a fine, ten-frame hive, in which the surface of every comb was exposed to view. But the bees limited themselves to a couple of frames, so this beekeeper's great effort at design and woodworking was mostly wasted. The thing is, that the bees of a colony need a close and constant proximity to each other, and they need to know that their queen is nearby. An enormous amount of communication goes on between the bees inside a hive, and such communication is rendered impossible when some of the bees find themselves isolated on combs more or less separated from the rest.

There is nothing wrong with a colony being very small. If queenright, it carries on all the usual activities of a full-size colony.

During a good nectar flow it will sustain itself, and even store some surplus, but its stores disappear very fast if the flow stops. So you have to keep an eye on it, or you will look one day to find that the bees have absconded, leaving some starving brood behind, or that they are themselves dead from starvation. It is a simple matter to feed an observation colony.

You just invert a small bottle of sugar syrup over a hole in the cover, with a couple of little holes punched in the cap of the bottle, and refill it from time to time.

If the observation hive is set quite a distance from the out-of-doors, then the bees will crawl through a considerable length of pipe or hose to go to and from it, but I don't think such a tube should be more than maybe three feet long, just out of consideration for the amount of walking those bees are going to have to do. A length of galvanized or plastic pipe works fine. It should not be made of screen, for the bees will then squander their strength trying to escape from it. If that long passageway is made large enough – say, four inches or more in diameter – then the bees can fly back and forth through it, but now the problem is, that when the comb in the observation hive gets all drawn out, the bees will start building comb in that passageway, and you've got a mess on your hands.

A couple years ago I set my observation hive up at a nearby nature center. Lacking forethought, I set it up near a wall, so that one side was always shaded, and the bees were hard to see from that side. And of course, that is the side the queen was always on, away from the light. When the panels were on the hive the queen showed no predilection for the shaded side, of course, but if I left them off, so that visitors to the nature center could watch, then they never saw the queen at all.

One final bit of advice: When you insert the glass in your observation hive, smear a bit of vaseline on the edges. Otherwise, the panes of glass will be immovably propolized. And you are sooner or later going to need to get them out, to clean them off. In fact you will need to take the observation hive apart at the end of every summer, for it is difficult, and pointless, to try to winter it over. And what, then, are you going to do with that comb of brood and bees? What I do is keep one of my regular hives short one comb, by replacing the comb with a piece of pine board at the side, cut to the right size. Then I remove the dummy comb (board), create a space in the center, and insert the observation comb there – queen and all. The next summer, when you start up again, use a new comb, freshly drawn from foundation. □

Questions and comments are welcomed. Use Interlaken address above, and enclose a stamped envelope if you with a response.

QUESTIONS? ANSWERS!

Richard Taylor

Royal Time-Table

Q. When introducing a new queen to a nuc or to a colony, do you introduce her immediately or after a few days?

Maurice J. Walso
Limerick, Ireland

A. Introduce the queen in her mailing cage at once, having poked a hole through the candy. The bees then liberate her within a day or two. It is very easy to introduce a queen to a nuc, or to a colony that has been moved from its stand, because all the older bees, who might attack her, return at once to the original location.

Cold Bees

Q. Do some races of bees winter better in the northern latitudes than others?

Craig Harvey
Jordan, NY

A. Of the bees that are now commercially available, it has not been my experience, nor have I heard others claim, that some winter better than others.

Editor's Note: Some bees appear to do better in colder areas than others. Generally, darker, smaller bees do better than large, lighter colored bees, but inbreeding genetic lines has blurred these tendencies.

One Less

Q. What is a follower board and how is it used?

James E. Constance
Mansfield, OH

A. A follower board is nothing but their sheet of wood, the same size and shape as a standard deep frame, designed to hang in the hive like a frame. So far as I know they are not commercially made, but are easily home made. Two such boards take the place of one regular frame. They are placed at the outside, with nine combs between them. Their purpose is mainly to induce the queen to lay in nine combs. When ten combs are used in a hive, without such boards, the queen usually does not lay in the outer two, but only in the other eight combs. I used follower boards, extensively, for years, but finally decided they were entirely useless for my purposes.

Check It Out

Q. Is it true that disrupting the brood nest too much causes supercedure?

J.W. Frederick
Sapulpa, OK

A. I know of no evidence for this. Supercedure is in any case no great problem because the old queen is not destroyed by the bees until the new queen is mated, so there is no prolonged queenlessness. There are, however, far better reasons than this for not disrupting the brood nest, one being that usually one doesn't need to be there.

Better, Not More

Q. The clear brood nest method of swarm control involves removing two or three combs of brood from the center of the brood nest every two or three weeks and replacing these with empty combs or foundation. But what do you do with the combs of brood that you remove, in case you do not want to make increase in your number of hives?

Jim Easley
Lancaster, MA

A. If you are using two-story hives, you can simply swap combs of brood from below with broodless combs from above. Otherwise, you can use the combs of brood, together with adhering bees, and a new queen, to revive colonies killed off by tracheal mites. Or you can make up three-frame nucs, with new queens, and sell them to beekeepers who need them.

Sales?

Q. How can one market propolis?

Wayne Graham
Placerville, CA

A. Offers to purchase propolis appear regularly in the classified ads of the bee journals.

Where Did It Go?

Q. I have been feeding my bees five pounds of sugar dissolved in water. The next day the hive is the same as before. What happened to the extra weight?

Omer Herbert
Woodstock, CT

A. Bees convert the sugar to energy needed for warmth in winter and for flight in summer. The water is evaporated.

[Questions are welcomed. Address: Dr. Richard Taylor, Box 352, Interlaken, NY 14847. Questions not accompanied by a stamped envelope will not receive a response.]

GLEANINGS GLOBE

MAY, 1991 ALL THE NEWS THAT FITS

JACK ARNOTT REMEMBERED

Jack & Margaret Arnott

There are very few Editors of Beekeeping magazines in the world, so when even one is gone, it is a notable occasion.

We met Jack Arnott, Editor of the *Canadian Bee Journal*, and his wife Margaret our first year on the job, and we kept bumping into each other at various meetings around both of our countries over the years. Each time there were new things to share that only Editors share, and I greatly enjoyed our visits together.

Jack's son Bill and I also met at meetings, and we, too shared those things magazine people understand.

Jack passed away recently, and his son published the following tribute in the Cana*dian Bee Journal*. We will miss you, Jack.

Canadian Beekeeping Science Editor Jack Arnott of Orono passed away Sunday, February 3, 1991. He will be remembered by the beekeeping community as friend, teacher, researcher, apiarist, the 'beekeepers' beekeeper. His interest in beekeeping started when he was 10 years old and it was his major interest throughout his entire life.

Jack farmed during his teens and early twenties. He was left with the farm responsibilities after the death of his father in 1923. The Arnotts, uncles and cousins owned farms along the 3rd line of Proton Township. The center of the community was Wareham where the church and public school were located. Jack and his sister Rose attended high school in Dundalk about eight miles distant.

While on the farm, Jack took courses in story writing and was rural correspondent for the Dundalk Herald. He went on to take courses at O.A.C. in Guelph and first graduated in 1939 in Animal Husbandry. In 1942, he graduated with a B.S. in Apiculture.

He was instrumental in the Dundalk co-op and other farm programs in Grey County. Later, Jack decided to leave the farm and try research in bees. He went to Saskatchewan as assistant provincial apiarist. He married in 1946 and took his wife Margaret and young son Bill to Ottawa, where he was an apiculture research scientist at the Central Experimental Farms and kept some bees at Bell's Corners. While there, he became acting Dominion Apiarist.

In 1949, he was offered the job as Provincial Apiarist in Saskatchewan with an office in the Saskatchewan Parliament Buildings in Regina. He worked with the beekeepers to bring the largest load of package bees in a "Daisy Mae" transport into Saskatchewan, successfully. He took part in continued research with the scientists in Ottawa and wrote a well-accepted beekeeping manual for the Saskatchewan government.

In 1952, he decided to go into commercial beekeeping at Nipawin, Sask. still wearing two hats – commercial beekeeper and provincial apiarist. The family lived in Orono, but would go out to keep bees at Nipawin from April to October. A lot of trips for Jack, Margaret, son Bill and daughter Anne.

In the winters of the 50's Jack was fieldman for the Federation of Agriculture in Durham. By 1960, he started keeping bees north of Napanee.

Jack helped develop the concept of a national publication to serve the beekeeping community and was the Science Editor of Canadian Beekeeping until his death.

He was a gentle, kindly human being, who had a deep and abiding faith in the power of the almighty and the joy given to us in nature.

He is survived by his wife Margaret, son Bill and his wife Terri, daughter Anne and husband John Bartlett and four grandchildren Megan, Jennifer, Kyle and Devinn-Anne.

Natural Flavors & Colors In Products

GLORYBEE HAS TWO MORE HITS

Honey Ooze & Honey Sticks Both New This Year

Glorybee Natural Sweeteners, Inc., Eugene, OR is introducing five new flavors of Honey Stix. The new Honey Stix flavors are Sour Cherry, Sour Strawberry, Sour Grape, Sour Raspberry and Sour Apple. These Honey Stix contain pure honey, natural flavor, natural colors and citric acid. Test marketing has been very favorable. These new Honey Stix can only be purchased in bulk at this time.

Glorybee has also been selected by Ralston Purina to provide a promotional item called **Honey Ooze**.

Honey Ooze is a green colored honey packaged in a small squeeze pouch. 1,300,000 squeeze packs are being placed in Ralston Purina's Teenage Mutant Ninja Turtles cereal. The Turtles' cereal, containing the Honey Ooze, was shipped in early April to stores across the United States to promote the latest Ninja Turtle movie. The Honey Ooze plays a significant part in the movie as the "Powerful Energy Food" to the turtles. Glorybee hopes this new product will help consumers swarm to purchase the Teenage Mutant Ninja Turtles' cereal with Glorybee's Honey Ooze.

For information on these products, contact Glorybee Natural Sweeteners, Inc., 120 N. Seneca Rd., P.O. Box 2744, Eugene, OR 97402, (503) 689-0913

But why on the Roof?

LIBRARY BEE?

An immense bumble bee straddles the cupola atop the public library in Pembroke, MA, a quiet suburban community just south of Boston.

The townspeople like to tell you it's a honey of a bee! Their pride is justified for no one knows of another library in the country or, for that matter, a public building anywhere, that is similarly endowed.

This is a unique creature indeed, weighing 45 pounds and standing 47" tall, with wings outspread as though ready for takeoff.

The bee is a clever piece of sculpture, the gift of its creator, Richard Edlund, a Pembroke artist and husband of the late Lucia Edlund, who was head librarian here for 12 years.

Using hundreds of pieces of wood, Edlund constructed the bee's skeleton and secured it to lightweight, one-inch aluminum tubular legs. Over this the artist placed finely meshed and rigid bronze screening to form the skin. Thermosetic plastic, such as used in auto repairs, was next applied to the bronze screening to form a weather-tight surface with silicon seal at the metal-to-plastic junctures. The antennae and eyes were fashioned from wood and bolted onto the body. Gold paint was then applied over the entire figure. Transparent plexiglass wings, veined with gold paint, were fixed to the wing mounts.

The bee, skewered through the midriff by the library lightning rod, was mounted on the cupola 16 years ago, Edlund himself doing the honors with the help of the Pembroke Fire Department and a 40-foot ladder, amid the encouraging cheers of a few hundred spectators.

But why a bee?

The library reports that it has nothing to do with apiculture although the trustees harbor only the loftiest respect for the insect, recognizing that the introduction of the honey bee into the Western Hemisphere supposedly occurred in the Massachusetts Bay Colony in 1638, many of the early settlers having bought them here.

What Pembroke had in mind was spelling – a spelling bee. In the fall of 1974, Madelon Baltzer, the assistant librarian, discovered while researching the history of the library, that a public spelling bee was held in May of 1875, raising money enough to purchase the library's first books. This the case, it seemed only proper, with the library's 100th anniversary coming up in 1975, that the bee serve as the library landmark, standard bearer, mascot or whatever, and that the trustees institute the tradition of staging a bee each year. This has since happened. A bee is now a popular annual event, all local schools involved.

As for the big symbolic bee, it continues to sit as an inspiration to spelling diligence, with one or two unauthorized "flights" that have caused the town to buzz with indignation.

Yes, there has been a problem with youthful pranksters bent on ascending the library building to abscond with the bee. Once the bee was recovered at the home of a teenager in a neighboring town. The get-away car, the authorities mused, was a VW Rabbit!

More intriguing was the manner in which the beloved bee was returned by the police late one night. Possibly some good came of the affair. People opined that for any driver coming home from a night of drinking in a local pub, the sight of an enormous bee standing on the roof of a police cruiser should have been enough to make him swear off the bottle forever.

ORANGE COUNTY FAIR & HONEY BEES

"How Sweet It Is" will be the theme of the 1991 Orange County Fair, which will feature a honey of a lot of bees and honey-related exhibits and contests.

"We've had bee and honey exhibits at past fairs, and they've always been quite popular," said Fair Feature Exhibit Supervisor Beverly Heximer, who is working with the Orange County Beekeeper's Association on the event. "This year, as our theme, we expect it to be even more of a crowd-pleaser."

Fairgoers will be able to see slates of bees, demonstrations on beekeeping, honey extracting and candlemaking, and will be able to taste samples of honey at the fair, which runs July 17-28 in Costa Mesa.

Beekeepers can compete in a "hivefull" of categories, including honey classes such as alfalfa, avocado, bean, California buckwheat, clover, cotton, eucalyptus, manzanita, mesquite, orange, safflower, sage, sumac, tamarisk, wildflower light and wildflower dark.

"Beekeeping is a great past time for many people; it's become quite popular," said Heximer. "It takes a certain personality, to wear the outfits and everything, and to endure a certain amount of stinging. But beekeepers are very warmhearted people. They're very giving, have a lot of patience, and work very hard."

There will also be competitions for beeswax, chunk and comb honey, creamed and crystallized honey, and extracted honey.

Entry fee for the beekeeping and honey competitions is 70 cents per entry. The contests are open to all Californians with June 5 as the entry deadline.

For more information, call (714) 751-3247 or write to the fair at 88 Fair Dr., Costa Mesa, CA 92626.

HONEY BOARD HIGHLIGHTS

The National Honey Board has updated its popular brochure of consumer recipes, "Add Honey, the Golden Touch" The new brochure highlights honey sauces, toppings and spreads, including such delectables as Ambrosia with Honey Cream Dressing.

As with the earlier edition, "Add Honey, the Golden Touch", the National Honey Board is making copies of "Honey, the Golden Touch" available at no charge to *assessment-paying supporters* of the Board at quantities of up to 1,000 per calendar year. State and local beekeeping organizations may also receive supplies of the brochure for special events, such as fairs and annual meetings. Others may purchase "Honey, the Golden Touch" at a cost of five cents for each brochure. Please mail your order, along with a check or money order, if appropriate, to the National Honey Board office.

At little or no cost, including a copy of "Honey, the Golden Touch" with each jar of honey sold is a terrific way to help increase your customers' appetite for honey!

For more information, contact Gretchen Frederick, National Honey Board office at 421 21st Avenue #203, Longmont, CO 80501-1421.

Borders, Imports, Levies & Bears

CANADA NEWS

At least two Canadian groups oppose proposals to exempt Hawaiian queen bees from the Canadian ban on imported bees from the United States.

Both the Canadian Honey Council (CHC) and the Manitoba Beekeepers' Association have voted against the proposal.

A CHC proposal that would have supported allowing Hawaiian queen bees to enter Canada because "there are no scientific reasons to continue the ban" was defeated 4 - 3 with three abstentions.

Instead, the CHC executive approved a motion that it ask the federal government extend the ban on importation of honey bees from the U.S. for another two years.

The CHC did approve, by a 5 - 4 vote, a proposal to have the CHC co-operate with Agriculture Canada in a scientific study of the merits of importing Hawaiian queen bees. The study results would include scientific criteria under which Hawaiian queens could be imported.

The Manitoba Beekeepers' Association also voted to instruct its board of directors to continue to oppose bee imports from anywhere in the U.S.

The CHC executive also decided to seek a wider 'no-man's land' between Maine and New Brunswick. The council said that between 25,000 and 35,000 hives from the southern U.S. are taken to Maine for the blueberry season there.

It will ask the federal government to contact the U.S. government requesting these hives be kept back five miles from the international border.

The CHC is backing efforts to import under quarantine Buckfast stock from England, Denmark or Sweden for the breeding program at the University of Guelph, Ontario.

Since the Canadian closure to most imported bees, there have been incidents of bees being smuggled into Canada from quarantined areas. The CHC noted only minimal fines have been imposed and decided to ask the federal government to approve a minimum fine of C$25,000 (US$21,625).

CANADA ASSESSES HONEY

The Canadian Honey Council is planning to establish a national agency to promote the sale of honey and research within the industry.

The agency would be funded by a proposed one-cent-a-pound national levy on honey sold at the producer level.

Dale Hansen, who is co-ordinating the project, said the CHC is proposing a national agency comprised of three producers, one packer and one CHC representative to administer the program.

Before a levy is implemented, all producers with more than 50 hives would be given the opportunity to vote on the proposal.

"It is possible for a national program to be instituted without the participation of every province," Hansen said. "However, it would certainly not be as effective if it only includes producers from some of the provinces.

"I would hope that we can all co-operate to help ourselves and the Canadian honey industry. We as producers must aggressively market our product. We cannot sit aside and expect someone else to do it for us."

He said the CHC is proposing that a producer would be exempt from the levy for the first 50 hives or 5,000 pounds of honey.

IMPORT PROTECTION

The Nova Scotia government has announced a program to pay half the cost of packaged bees imported from New Zealand.

The provincial government last year barred the importation of bees from the United States and elsewhere in Canada because of mite infestation.

Agriculture Minister George Archibald, announcing the C$90,000 (US$77,850) program, noted Nova Scotia and New Zealand are among the few places in the world where the bee population is free of the mites.

The three-year program will add 3,000 bee colonies for about 400 provincial beekeepers and allow the province to eventually become a major *exporter* of packages bees.

Bees are essential for Nova Scotia's C$10-million (US$8.65-million) blueberry crop, which is too large to be pollinated by wild bees.

Until now, Maine growers have been able to produce better yields of blueberries than Nova Scotia because they have had no pollination problems.

Loring Wilmot, sales manager of blueberry producer Oxford Frozen Foods Ltd., said: "We have difficulty getting enough bees, but the Americans are bringing them into Maine like crazy."

BEARS BEWARE

The Manitoba Beekeepers' Association wants the provincial government to think before it moves black bears from one area of the province to another.

At the association's annual general meeting, members noted that many areas of the province are not native to black bears. They voted to have association officials approach the Ministry of Natural Resources – which captures black bears that are causing a problem in one area and moves them to less populated locations – to ask them not to move the bears into areas where they could become problems for beekeepers.

CAM JAY HONORED

Dr. S.C. Jay of the University of Manitoba is receiving accolades after his retirement at the beginning of the year. Both the Manitoba Beekeepers' Association and the Canadian Honey Council have praised Jay for his 30 years of research, teaching and assistance which they said greatly benefited the Canadian industry.

Congratulations Dr. Jay!

Who was from MN?

NEW AG. SEC.

The appointment of Edward Madigan as the U.S. Secretary of Agriculture could signal an end to a decade-long White House siege on federal farm programs. Carl Zulauf, agricultural policy expert at Ohio State University, says choosing Madigan may indicate that President Bush wants to leave farm policy alone for a while. For the past decade, the White House has led the charge to reduce spending on support to farmers. Madigan, the ranking minority leader on the House agricultural committee, is a veteran of farm bill and budget debates and is seen as fairly moderate on the spending issues. Such a position will become more interesting in about two years when federal budget concerns again take the national spotlight and the White House is looking for places to cut spending. Farm commodity programs are likely to be viewed as candidates for further cuts provided farm income does not decline substantially.

Edward Madigan is the 24th secretary of agriculture. Who were the first 23? Here's a list:

Norman J.Colman	1889	MO
Jeremiah M. Rush	1889-1893	WI
Julius S. Morton	18931897	NE
James Wilson	1897-1913	IA
David F. Houston	1913-1920	MO
Edwin T. Meredith	1920-1921	IA
Henry C. Wallace	1921-1924	IA
Howard M. Gore	1924-1925	WV
William M. Jardine	1925-1929	KS
Arthur M. Hyde	1929-1933	MO
Henry A. Wallace	1933-1940	IA
Claude R. Wickard	1940-1945	IN
Clinton P. Anderson	1945-1948	NM
Charles F. Brannan	1948-1953	CO
Ezra T. Benson	1953-1961	UT
Orville L. Freeman	1961-1969	MN
Clifford M. Hardin	1969-1971	NE
Earl L. Butz	1971-1976	IN
John A. Knebel	1976-1977	VA
Bob Bergland	1977-1981	MN
John R. Block	1981-1986	IL
Richard E. Lyng	1986-1989	CA
Clayton K. Yeutter	1989-1991	NE

SEND YOUR NEWS TO THE GLOBE

CA Starts Fast

PESTICIDE BOOKLET

A new publication from the University of California will help employers meet state pesticide training requirements.

The *Illustrated Guide to Pesticide Safety*, a product of the UC statewide Integrated Pest Management Project, is a bilingual publication written in an easy-to-read style with cartoon-like illustrations. Captions are written in both Spanish and English.

The Illustrated Guide to Pesticide Safety is available in two shrink-wrapped packets. The $5 Instructor's Packet (21489(includes the 80-page large format edition for instructors, plus five copies of the worker's edition. The $4 Workers Packet (21488) contains five copies of the 48-page worker's edition.

Publications are available from many county Cooperative Extension offices throughout California. Publications can also be ordered by title and number from ANR Publications, Dept. NR. University of California, Oakland, CA 94608-1239. Enclose a check payable to UC Regents. Call (415) 642-2431 to place orders using VISA or Mastercard.

☆ CALIFORNIA ☆

The Sacramento Area Beekeepers Association will sponsor a workshop on May 4th, 1991 to be taught by Dr. Norman Gary, professor of Bee Biology at the University of California, Davis.

The workshop will include information on bee behavior and demonstrations of beekeeping practices. Dr. Gary is a knowable and entertaining instructor, who will provide time for question about all aspects of beekeeping.

Th class will be held at the Sacramento County Agricultural Extension Office, 4145 Branch Center Road, Sacramento, CA from 9:00 a.m. to 1:00 p.m. for a cost of $30.00 per person or $50.00 for two people in the same family.

Registration packets may be obtained by calling Nancy Stewart at (916) 451-2337 or by writing to Sacramento Beekeeping Supplies, 2417 21st St., Sacramento, CA 95818. The registration deadline is April 22nd.

☆ ILLINOIS ☆

The Stateline Beekeepers Association will be sponsoring a beekeeper's workshop on Saturday, May 18, from 1:00 to 5:00 p.m. at Apple Creek Apiaries, 8384 North Broadway, Apple River, IL. The workshop will be conducted by Mr. Terrence N. Ingram for both beginners and experienced beekeepers.

The workshop will be a hands-on experience, so bee suits, veils and gloves should be brought to the workshop. Anyone not having access to these should contact Mr. Ingram in advance so some used ones may be obtained.

Topics to be presented include: working honey bees with as little disturbance as possible; finding the queen in a busy hive; spring management techniques; maximizing honey production; supering without swarming; hiving a swarm; and queen rearing without grafting.

The cost for the four hour workshop is $25 to be paid in advance of the workshop. Send your check to: Terrence N. Ingram, Apple Creek Apiaries, 8384 N. Broadway, Apple River, IL 61001

☆ KENTUCKY ☆

The Green Valley Beekeepers Association will sponsor a beekeeping workshop at 9:00 a.m. on May 4, 1991. It will consist of a beginning beekeeper's presentation, instruction of "fair" honey preparation, various displays and exhibits, plus a special class on queen rearing, will be conducted by Dr. Tom Webster, Kentucky State Apiculturist. Twenty openings for the class are available on a first-come-first-serve basis. Registrations may be made by contacting George Jones, president of the Green Valley Beekeepers Association, (502) 684-3419. Registration fee for the queen rearing class is $10.00 each. Refreshments, including many honey baked items, will be available plus a B-B-Q lunch will be provided for $5.00.

The workshop will be held at the Stanley Men's Club approximately five miles west of Owensboro, Kentucky. Directions and more information can be obtained from Sherries Coleman, Sec./Treas. Green Valley Beekeepers Association, 4523 Sutherland Rd., Owensboro, Kentucky 42301.

☆ MICHIGAN ☆

Any Michigan Beekeeper interested in raising queens can write Queen Rearing Seminars, 119986 Hastings Rd., Freeport, MI 49325. There will be seminars throughout Michigan next year. Grafting and non-grafting techniques will be discussed.

☆ OHIO ☆

1991 Beekeeping Short Course Schedule. Agricultural Technical Institute, The Ohio State University, Wooster, Ohio.

All courses run from Friday noon to Saturday, 5:30p.m. All are taught by Jim ? The schedule is as follows:

May 3-4, Basic Beekeeping; June 7-8, Honey Bee Diseases; June 21-22, Honey Bee Queen Production.

Classes are for either credit (1 hour) or non/credit. The cost is

Display Index

BOTTOM·BOARD

They Have FUZZY LEAVES Those LAMB'S EARS

B.A.STRINGER

"Lamb's Ears" is the common name for a popular bedding plant with soft, wooly, silver-grey leaves. From June through August, thick spikes of pale purple flowers are eagerly worked by bees for nectar and some pollen. The flower spikes grow 12 - 18" tall and are densely packed with the inconspicuous blooms among small furry leaves.

The plants are hardy perennials and form a very attractive ground cover in sun or light shade. The fuzzy foliage is particularly striking when plants are massed under deciduous trees or along the edge of a flower border or pathway. The silvery color is an excellent foil for bright flower colors or scarlet leaves. Gertrude Jekyll, a landscape architect and artist of the early 1900's, was famous for her Grey Gardens in which she used Lamb's Ears extensively. Her English garden plans are still works of art.

While the furry leaves may be damaged by frosts or by heavy rain, the plants recover quickly in spring to form a dense wooly mat of shining silver. Plants will spread slowly to cover an area, and will co-exist with any but the lowest-growing garden companions. If necessary, plantings may be renewed every three - four years by removing the oldest plants and resetting the vigorous new sprouting roots. The original planting can be made from seeds or from purchased plants. Early spring is the best time to establish or renew a bed of Lamb's Ears, as the lengthening days encourage fast growth. The plants need good drainage, but only average soil and light watering.

Lamb's Ears, sometimes called Wooly Betony, belongs to the Mint Family of plants, as do many good bee forage species. Plants in the Family Labiatae have characteristic square stalks. This plant has had different Latin names, and was formerly called *Stachys lanata* (lanata = wooly) but is now generally known botanically as *Stachys byzantina*. An ancient Greek name used by Dioscorides, *Stachys* means 'spike' referring to the flower form, and *byzantina* means 'of Istanbul' the city classically known as Byzantium. It is native to Turkey and Southwest Asia.

Another common name for Lamb's Ears, and its relatives, is Woundwort, as the leaves were apparently used as absorbtive dressings in early times.

There are about 300 species of *Stachys*, most of which are native to tropical and subtropical mountain areas of Europe and Asia. In this country, the genus is often called by the common name of Hedge Nettle, and some species may yield honey in Texas and CA.

A low maintenance plant which is very attractive to bees, Lamb's Ears is well worth growing in the flower garden. □

B.A. Stringer will be happy to answer questions regarding using honey plants in the home landscape. Send a self-addressed, stamped envelope to B.A. Stringer, 19919 Summit St., Blodgett, OR 97362