FEB 92

GLEANINGS IN BEE CULTURE

INSIDE . . .

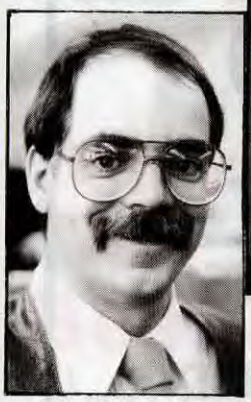
WOODEN WORLD
EVERYTHING YOU WANT TO KNOW ABOUT BEEKEEPING WOODENWARE

REPAIR, DON'T REPLACE
FIXING FRAMES IS BETTER, AND CHEAPER

FLORIDA
VISIT THIS HOSTILE PARADISE

ROOT PUBLISHING

JOHN ROOT



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Painting by Mike Yatko

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(ISSN 0017-114X) Vol. 120, No. 2
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INNER·COVER

There's a few bookkeeping items that need addressing this month.

First, we are already preparing our annual *Who's Who In Apiculture,* the directory of American Beekeeping Organizations. Certainly the most comprehensive list available, it is never perfect, but a goal we constantly strive for. Annual turnover in Secretaries is the greatest challenge we face, but often our queries lie unanswered, and we (our grossly understaffed and underfunded 'we') can only assume no changes have occurred. Sometimes this isn't the case.

And, too, new groups spring up, others dissolve, and without your cooperation we can not know these changes. Probably the greatest omission is knowing of an error and not correcting it. True, it is much easier to say nothing.

But remember, this list is used by everybody who wants to put new and inquisitive beekeepers in touch with a local group who can help. We send out hundreds and hundreds of our April issues to county extension agents, libraries, teachers and the like who are usually the first contacts a new beekeeper makes.

If your group has a new Secretary this year, let us know. If you've started a new group, let us know. If your old group has dissolved, let us know. If you State group has changed, let us know.

We want to produce the most complete, up-to-date and useful Directory of American Beekeeping as possible, and be able to give it to anyone who wants it free of charge. That next new beekeeper may want to join your group. Can you afford to miss him?

Let us know.

•

Another matter needs mentioning, too. We recently published an article by our Older, But Wiser columnist entitled *A Wall Street Beekeeper.* The article touted the benefits of requeening every colony every year. Also in the article he discussed, but did not detail, his two-queen system. So, because the article was about requeening we didn't attend to the benefits of his two-queen system.

Boy, was that a mistake.

In the six years I've been here we have not received as much mail on **any** article as *Wallstreet,* and all because we focused on the wrong part of what obviously is a popular subject – How to operate a two-queen system. And his system, though certainly not a mystery, works well, and has for years, for him and others who have tried it.

So, for all of you who have written to us to contact O.B. Wiser, or want to know more about his two-queen system – next month we have it all. Overwhelming demand, (and an urgent request from an overworked Editor) have convinced ole' O.B. that his two-queen system should be fully explained. And so it shall be. In March. In ***Bee Culture.***

•

A third subject needs mentioning. Again and again and again.

With the first few section 18 labels for Amitraz (Miticur) already released, another chemical is unleashed inside a beehive.

Continued on Page 108

Some Unconnected Thoughts

Reader Assistance

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NEXT MONTH

March begins the active season. The rush starts now, and for the next eight months it's bees, bees, bees!

We'll start the season right by looking at O.B. Wiser's Two Queen System. This will take you from start to stop and show how you can make more honey than you have supers for. Read the most asked about (and asked for) article in the last two years. Two Queens and You.

Then, there's a look at the Almond Madness in California. Sometimes contributor Marshall Dunham relates a harrowing trip from Oregon to California the year it rained. And, if it doesn't let up, this year may be a repeat. Moving bees in a big way – Next Month.

Plus, profiles of a couple of successful sideliners; a couple of 'getting bees out of there' articles (come April and May lots of us will be called on to do this task); a look at varroa mite detection; a swarm story and lots more.

The next couple of issues? Varroa I.D., catching swarms, finding apiary sites, comb honey production!

So, catch *Bee Culture* next month – we'll show you lots of ways to get more bees, to move bees and to catch bees! □

MAILBOX

■ Is Big Better?

With each issue of *Bee Culture* I regularly read the columns by Roger Morse and Richard Taylor. I have met and and talked with both of these gentlemen and I value, highly, their knowledge and opinions.

Now, in the December issue of *Bee Culture* on page 650, Dr. Morse concludes "small colonies gather more than large ones."

In the same issue, page 687 "Questions" Richard Taylor answers Question #4 with a completely opposite reply; "A strong colony produces far more"!

Who's right?

Frank J. Reber
Fairport, NY

EDITOR'S NOTE: Actually, both are right, but not at the same time.

A small colony will outperform a large colony on a per bee basis, i.e. More honey produced per forager.

However, more bees means more honey, pure and simple. But their efficiency decreases for various reasons. Primary among them – an incredible amount of brood (large colony) requires an even larger number of house bees to care for them.

■ Feral & Healthy?

Toge Johansson dismisses as a "bogy" my suggestion that feral colonies may be a source of American foulbrood, and cites as his evidence that such colonies, typically nesting in hollow trees, are seldom found to be infected. The fallacy of this reasoning is not hard to see. Feral or "wild" colonies that get AFB die out. And hollow trees containing dead colonies, typically fairly high from the ground, are not discovered. It is hardly surprising, then, that the bee trees that *do* get discovered turn out to be healthy.

Richard Taylor
Trumansburg, NY

■ Many Thanks

Many thanks for your excellent illustrations on making beeswax ornaments. I intended to try them this year and was delighted to find instructions in *Bee Culture*.

They turned out well and smell so good!

Ruth O'Laughlin
Canton, OH

■ Be Specific!

In the article on beekeeping, honey and pollination in Oregon, mention is made of decline of White Clover. Be specific, is it Dutch White Clover, or the seven foot tall White Blossom Sweet Clover? The latter was the big producer in Central States before WWII.

John Schneider
Smithton, IL

■ Needs Jars?

This concerns the "Letter to the Editor" in December *Bee Culture* – Jars. Richard Taylor had mentioned wide-mouth jars and lids in his article. I have been unable to find plastic covers for wide-mouth jars at a reasonable price. The two-piece lids that are used for canning are a nuisance to the customer. They cost about 6¢, or 8¢ for the lids only. That takes the profit part of the honey sale.

Since American International Container advertised in the Florida State Beekeepers Newsletter, I visited their Tampa Office. They are willing to stock the cover if there are enough customers interested. No price quoted, since they have to find them first, they have to buy 5,000 initially. I would appreciate if other beekeepers would join my effort to get them to help us. You can contact them at: 5120 Adamo Dr., Tampa, FL 33619 (813)247-1069 FAX (813) 247-4573.

Gerhard K. Guth
Micanopy, FL

■ Needs Info

We are interested in learning about the beekeeping industry in the U.S. We have interest in working with Co-op's and other American organizations. Anything you can send us would be appreciated, and we will try to contact you.

Mailing address:

Igor Schepetkin
Pushkina st.,
48 A – 5;
Tomsk, 634053, USSR

■ Wax Problems

I'd like to hear from other readers how they get their bees to work wax foundation with the plastic middle? Or if they *can* get bees to work it.

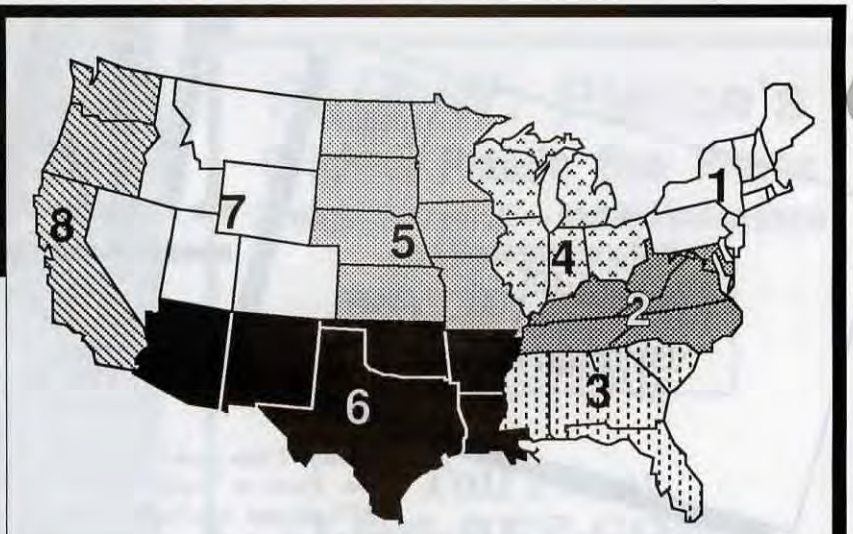
I'd also like to hear of ways to separate honey, wax and 'slum' (the dark who knows what) that everyone uses?

If other beekeepers would like to drop me a note, I'll post the results back to the Mailbox!

Tom Porter
P.O. Box 228
Redwood Valley, CA 95470

FEBRUARY Honey Report

February 1, 1992



REPORT FEATURES

Prices shown are averages from many reporters living in a region, and reflect a region's general price structure. The Range Column lists highest and lowest prices received across all regions, from all reporters.

	Reporting Regions								Summary		History	
	1	2	3	4	5	6	7	8			Last	Last
Extracted honey sold bulk to Packers or Processors									Range	Avg.	Month	Yr.
Wholesale Bulk												
60 #Wh.	44.60	46.93	39.00	35.60	37.57	42.50	47.30	36.70	27.90-60.00	41.50	42.05	39.16
60 # Am.	39.96	43.78	33.60	33.60	36.00	40.50	43.85	38.67	30.00-52.00	39.70	40.89	36.44
55 gal. Wh.	.676	.675	.510	.570	.578	.538	.548	.563	.530-.750	.583	.596	.50
55 gal. Am.	.650	.540	.500	.540	.590	.505	.530	.540	.420-.650	.544	.552	.46
Wholesale – Case Lots												
1/2 # 24's	19.15	21.08	16.50	18.86	15.06	21.50	22.50	21.50	15.00-24.00	19.29	21.55	-
1 # 24's	28.27	30.21	26.93	29.06	26.92	28.65	32.32	27.50	23.50-39.60	28.80	29.15	26.70
2 # 12's	26.74	29.28	24.93	26.45	23.92	27.75	28.75	31.19	22.20-38.40	26.99	27.43	24.60
12 oz. Bears 24's	26.13	28.03	29.10	25.55	23.42	25.66	29.57	24.00	22.80-33.00	26.50	24.26	-
5 # 6's	28.95	30.26	25.88	30.46	26.01	34.88	27.75	26.95	24.00-36.00	29.29	26.68	25.82
Retail Honey Prices												
1/2 #	1.10	1.31	.98	1.22	.91	.99	1.11	1.26	.79-1.75	1.14	1.23	1.00
12 oz. Plas.	1.59	1.62	1.50	1.55	1.28	1.53	1.58	1.34	1.13-1.99	1.47	1.53	1.34
1 #	1.67	1.73	1.62	1.88	1.51	1.68	1.98	1.56	1.10-2.25	1.70	1.71	1.58
2 #	3.29	3.13	2.80	3.38	2.60	2.75	2.95	2.49	2.40-4.20	3.00	2.96	2.87
3 #	3.95	4.01	3.87	4.13	3.46	3.89	4.33	3.97	3.39-4.50	3.90	4.35	3.79
4 #	5.34	5.31	5.00	5.25	4.47	4.55	4.95	4.99	4.25-6.49	5.02	5.23	4.96
5 #	7.94	6.55	5.67	6.53	5.75	6.55	5.88	6.09	4.59-8.75	6.46	6.35	6.08
1 # Cr.	2.55	2.69	2.21	1.87	1.34	2.19	1.99	2.14	1.07-4.00	2.09	2.32	1.65
1 # Cb.	2.41	2.56	2.75	3.25	3.24	2.19	2.79	3.80	2.25-5.00	2.87	2.70	2.38
Round Plas.	1.95	2.25	2.44	2.13	2.25	2.22	4.50	2.08	1.35-4.50	2.47	2.40	2.00
Wax (Light)	2.50	1.25	1.25	1.22	1.28	1.15	1.10	1.15	.95-3.50	1.41	1.22	1.08
Wax (Dark)	2.00	1.08	1.20	1.10	1.10	1.09	1.08	1.10	.90-2.25	1.18	1.06	.98
Poll./Col.	33.00	30.00	27.50	30.00		27.75		32.67	22.00-40.00	30.86	28.10	29.58

MARKET SHARE

Much is afoot in the big world of honey producers and packers. The rumor is that producers O.K.ed the NO refund provision of the Honey Board referendum, as long as packers would agree to absorb 1/2¢ of the 1¢ assessment. Will they? What will happen? Who can tell? Stay tuned the intrigue is incredible!

Region 1

Sales sluggish for the most part, even with winter in full swing. Prices steady to lower due to slow sales, good supplies and a down turned economy. Varroa more common, but colonies in good shape. Weather ideal for easy wintering, but January snow may be bad.

Region 2

Sales steady for this time of year, but prices in this region gaining steadily, primarily due to specialty crops and seasonal sales. Supplies low, though. Colonies in good condition, generally, and problems with mites seem to be slowing.

Region 3

Prices and sales steady. Specialty crops, especially citrus, selling high, but in short supply. Colonies in good shape, but mites still around, and causing problems.

Region 4

Prices and sales generally stable and steady. Seasonal influence only marginal though, so supplies in good shape. Mild weather earlier may cause spring feeding.

Region 5

Prices steady so far, but weak economy threatens any increase. Excellent crop makes supplies strong, but without demand few sales. Early storms cut fall feeding short, watch for hungry hives.

Region 6

Prices and sales steady, but little change foreseen. Winter storms, and incredible floods have washed away some boxes, caused more to move, and generally messed up the area.

Region 7

Prices in this typically high priced region abnormally low, and demand, thus sales slow. Some predict increased forfeitures to government program if sales don't increase. Colonies in good shape, but lots of snow (which helps moisture) may cause problems.

Region 8

Prices all over the map, depending on where you are. Up north increased moisture seems to bode well for next season, and rains in CA helping, too. Pollination plans well under way in almonds and other crops. White fly will cause shortages this spring.

RESEARCH REVIEW

DR. ROGER A. MORSE

Cornell University • Ithaca, NY 14853

"Some honey plants are under government attack."

More than half of the honey we produce in North America comes from accidently introduced plants. However, not everyone outside of beekeeping circles is happy about some of these introductions. The list of plants that at least someone in the country would like to eradicate, or at least reduce in numbers, includes bindweed, Brazilian pepper, Canadian thistle, leafy spurge, melaleuca, mesquite, purple loosestrife, salt cedar, star thistle, and three species of knapweed. And, that list may not be complete. Like it or not, the international movement of people and agricultural products is causing the world to become more homogenized.

What prompts this review is an article in *Science* magazine on yellow star thistles (*Centaurea solstitialis*), a honey plant that is widespread in the western states, especially California. Lawrence Goltz, former *Bee Culture* Editor and revisor of the honey plants manual published by the A.I. Root Company, stated in the 1977 revision that star thistle honey is white or extra light amber and that it has a fine flavor. In California it blooms from early July until late August but frequent rainfalls are necessary for the nectar flow to be continuous. Burgett, Stringer and Johnston, in their 1989 book on honey plants in the northwest, state that in Oregon the honey is yellow and has an "excellent flavor" Frank Pellett, in his 1920 honey plants book, said that this star thistle was found from Massachusetts to the Pacific Ocean but only in California was it a major honey plant.

Ranchers and farmers in the west don't care much for yellow star thistle because the "needle-sharp spikes of the mature thistle keep both cows and people out of fields and rangeland." Horses that eat the plant may die from a syndrome that includes destruction of brain cells. There are, according to the report below, over eight million acres of star thistle in California alone. For many years, weed killers have been used to control yellow star thistle, and some years the population has been so reduced that it is no longer a major honey plant in some areas.

The less obnoxious cousin of the yellow star thistle, the purple variety does well in the midwest and makes an excellent light amber honey crop.

But the Agricultural Research Service (ARS) of the USDA has entered the scene and believes it "has a neat solution for the yellow star thistle case" Over $23,000,000 is being poured into what is called biological control of noxious pests. The ARS is interested in the control of both what they believe are undesirable plants and insects. One of the favorite techniques is the use of insects that may devour pest plant species. Much of this money goes to overseas laboratories that search for native insects that feed on plants on the noxious plant list. Star thistle is not the only plant on the list to be attacked by the USDA but it is one of the major ones. In 1985, a weevil that attacks this star thistle was introduced into California, Oregon, Washington and Idaho. One researcher reports that this weevil is well-established in some areas and that weevil eggs are common in thistle heads.

What does all this mean to beekeepers? First, the idea of using biological control to control noxious pests is popular. It is being "sold" to legislators in some areas as being safer than is the use of pesticides. Second, there have been some notable successes to

Continued on Page 76

RESEARCH ... Cont. From Page 74

control noxious pests and these are always held up as examples of what might be done. However, there have been a number of great failures, too, and these are seldom mentioned. Just because an insect keeps a certain plant under control in some areas does not mean it will do so everywhere. Climate, soil types, competing plants and a host of other variables must always be taken into consideration. In the east natural control generally keeps gypsy moth numbers low, however, every six to ten years there is a horrible outbreak in some areas.

I don't mean to be unkind or facetious but I have come to yawn a bit when someone heralds a new biological control method for an important honey plant. It is a very difficult research area and real successes are far and few between.

I suggest the rapidity with which modern agriculture is changing will have a greater effect on honey plants in the future than anything else.

Recently, I have received reports indicating there has been a tremendous increase in canola (a modified rape) planted in the eastern states this year. No one seems to know how many acres are involved. Eastern beekeepers in some areas may be pleasantly surprised by a new honey flow in June. The free trade talks with Canada and Mexico could also do much to change beekeeping in this country. Already, 25 percent of the fruit we eat is produced outside of the country and it appears this percentage will increase.

Change is fun, and I think it should be encouraged because for the most part it is good. However, the effects on beekeepers can be great, and, both good and bad. I remember when I was in my teens, my father and I visited with a 3,000 colony New York State beekeeper who told us he spent Sundays on the road with his wife looking at changes in agriculture and for new apiary locations.

Being alert to changes in his area was probably a key to his being a success. □

References:

Beard, J. D. *Bug detectives crack the tough cases.* Science 254: 1580-1581. 1991.

RESISTANT BEES

STEVE TABER

"Yes, you can test your bees for disease resistance, and even begin breeding your own resistant stock."

I've written about honey bee resistance to AFB and chalkbrood before, but I think it's important and beekeepers should know how to do this themselves. And, be reminded that the more resistance your bees have to these diseases the less you'll need to treat them with chemicals. Resistance mechanisms to AFB and chalkbrood are almost the same, so what I say here applies to both.

This is an old idea, first proved by O.W. Park and two associates back in 1936. They bred bees resistant to AFB and distributed them all over the U.S. and around 1942 I bought one. They were limiting these queens to one per beekeeper, but that one queen was supposed to be used as a breeder. Later, about 1950 and for several years after that, they sold them though advertisements.

Their technique was to insert into the brood nest a comb sample containing at least 150 scales of AFB. They did this in the spring. Colonies would be inspected again in the late summer to see which were disease free. By 1941 90% of over 100 colonies so treated had not succumbed to the disease. It should be emphasized this was done with natural matings, artificial inseminations were not used during this preliminary testing.

Then, during the 60's Walter Rothenbuhler, while at Iowa State and later at Ohio State began studying the genetics of resistance to AFB. He was assisted during these studies by many graduate students and his close associate, Vic Thompson.

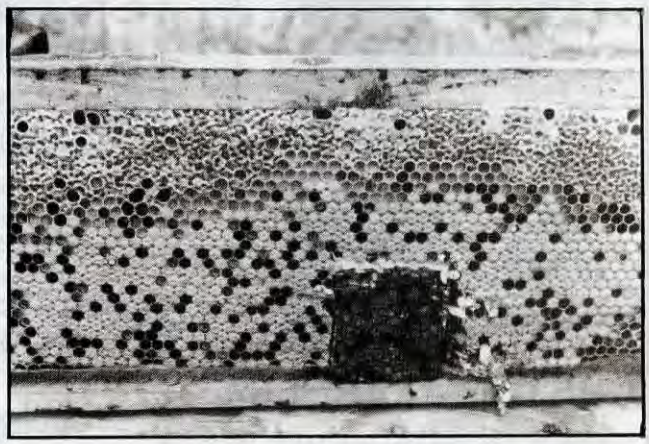
He discovered two recessive genes, or characteristics, that, when homozygous in the worker bees caused them to remove AFB scales from cells by ingestion. This behavior was the basis of their resistance to AFB and he termed it "hygienic behavior" (HYG). Further, he discovered that scales of AFB did not have to be used in the test, but rather dead, sealed brood worked just as well.

Walter developed lines of highly inbred bees that were non-hygienic (non-HYG) as well as the lines that were hygenic (HYG). Then he lost the HYG lines. Since he had never distributed them to other people studying bee genetics it looked like it was all over – and it was for a number of years. But then I got into the study of resistance.

At the time I was working at the USDA bee lab in Tucson, doing some cooperative research with Dr. Martha Gilliam on chalkbrood. After several discussions we arrived at the conclusion that bees that would clean out AFB scales would also clean out chalkbrood mummies. The question, though, was where were the bees with the factors responsible for hygienic behavior?

I sat around my office thinking about this for a long time – several months in fact. I had studied genetics, had taken many courses while attending the Univ. of Wisconsin, and had studied bees under Dr. Farrar, so I figured the answer should come to me, and it did.

Cut out a 2" x 2" section of brood comb (right) and place it in the freezer .



then, place an already frozen chunk in. Bees will clean it out, but if they do it fast – keep them!

My reasoning went like this. The genes for resistance must be fairly well distributed because in nature, bees susceptible to a disease die, leaving only those resistant, effectively increasing the frequency of resistant genes in the remaining population. All I had to do was to go looking for HYG bees. Rothenbuhler had shown the way – insert samples of dead brood into the brood nest, and the easiest way to kill brood is to freeze it. I removed 15 samples of brood comb, measuring about two inches square, placed them in plastic bags and into the freezer.

The next day these samples came out of the freezer and went into the center of the brood nest of 15 different colonies. I was excited because I knew there would be differences between those colonies in the rate of dead brood removal. I would find bees that were HYG, or at least partially HYG because all the colonies tested were headed by naturally mated queens.

From the colonies that had a sample inserted, a similar sample was removed to make room for the dead brood. The section removed went in the freezer to be inserted into another colony the next day.

Of that first batch of 40 colonies I tested none cleaned out the dead brood in 24 hours or less, but six cleaned out all dead brood in less than 48 hours. The other 34 took five days or longer to clean out the dead brood. This was in 1975, and I just knew those bees would be resistant to AFB and chalkbrood – and they were.

In 1979 I started my own business, and I immediately did the same thing with the 35 colonies I had. These bees were from completely different sources than those in Arizona. The results were almost the same – four colonies tested positive for HYG, while the rest tested non-HYG.

The problem of destroyed comb was solved by David Newton and N.L. Ostasiewski in work published in April 1986. They took a needle and inserted it into a sealed cell killing the pupae. The area of the comb so treated was marked and examined each day until the dead brood was removed.

I have tried this but for my purposes it is too time consuming. However that is beside the point.

But the object of this article is to get more beekeepers to test their bees for resistance. How you go about it doesn't make any difference, but there is one important point – you can't test just one colony. I think you have to test more than five because what you are looking for is *comparisons and differences* and you won't find a difference with only one or two units tested.

If you test thirty or so colonies and get about the same results I did, raise daughters from all of the HYG colony queens. In three to five years you will have *all* of your stock as resistant as Park did. But if you are in a hurry, you must AI you HYG virgins to *sons* of HYG mothers. That way you will be able to develop completely pure HYG stock in only one or two generations.

And that should significantly reduce the drugs you'll need. □

WOODEN WORLD

JEFF OTT

Woodenware. Each of us buys at least some of our woodenware, available from several beekeeping supply manufacturers. More resourceful beekeepers may even make some of their own supers, bottom boards or tops. However nearly everyone buys frames, because few of us can afford the special machinery and wood-working skills needed to produce them both correctly and cheaply.

But the very reason there are several companies that produce all types of wood goods means that 'probably' all things are not created equal. Or are they?

Why worry about comparing woodenware? Actually, isn't a 'medium' super a medium super? It says in the catalog that the frame is 6-1/4" – won't that work in anybody's medium super? I recall Richard Taylor writing once that he noticed the quality, or exactness, of wooden equipment cuts were slipping. That's the first time I'd ever considered it. Why is there so much burr comb in some hives and hardly any in another? Is it really just a matter of bee breeding and genetics or is it something more tangible, and fixable. Is it as simple as the setting of someone's saw or the quality of their blade? This is what we looked at when we made measurements, fitted pieces together, and took a look at Beekeeping Woodenware.

In preparing this article, I've had to make some fairly basic, albeit non-scientific assumptions and compromises. First, what equipment would I evaluate? Well, tops and inner-covers for sure. These never seem to please beekeepers. And why? Because of the abuse they take each time the hive is opened. Also, medium supers and frames, mainly because they're less expensive than deeps and there are more medium supers sold than either deeps or shallows. The last piece I ordered was the bottom board – the foundation for the rest of the hive, often sitting in the muck and mire, absorbing the worst winter snow and the soggiest summer rain. Finally, I ordered only the top-of-the-line equipment made by each supplier. Many suppliers have several grades of woodenware to choose from, ranging from select to economy or budget grades.

I did not measure every piece in every box I received. Rather, I measured only one of every piece. If the part I measured did not meet manufacturer's spec, it could have been the only piece in the entire factory that day that slipped through, or, perhaps the catalog did not reflect recent changes in the part specifications. I did not contact the manufacturers to question them about descrepancies. This is the equipment I received, just as you would have had you ordered it.

As in my previous articles on equipment, I won't attempt to tell you how to spend your hard earned dollar. That's your business. But, I want to give you an easy-to-use, side-by-side comparison of the woodenware available and let you make your own decisions.

There are woodenware manufacturers in the United States not included in this evaluation. I chose the companies that have been around the longest and between them, probably command the market. Because of a communication snafu I did not receive a medium super from Miller Wood Products. By the time I received their equipment, (a 9-9/16" deep with frames) it was too late to get another and still get this story done on schedule. They do manufacture mediums, however. I would guess the quality of their mediums is similar to what we received.

In the other articles on equipment I contacted the manufacturers, introduced myself and explained what I was doing. This time, I pulled out the catalogs, along with my Mastercard, and phoned in my orders. I wanted to receive it off the warehouse shelf, like anyone ordering equipment. I could have saved money by driving down to Root's Bee Supply Outlet store in Medina or to a local authorized Dadant dealer, but decided against it. I tried to treat everyone the same.

Before starting, I wondered about the interchangeability of the equipment. I knew everyone used 3/4" wood but I wanted to know the results of placing a Kelley super of frames on top of a Dadant super of frames. Does it work? The obvious answer is – yes. They fit and look nice when in place, but what about the famous bee-space? That critical little crack 'discovered' by L.L. Langstroth, and, when adhered to in the construction of a hive, revolutionized the beekeeping industry.

Langstroth found that if a distance of between 1/4" to 3/8" was left throughout a hive, between frames and other 'removeable' hive components, then the bees would leave that space open. Narrower than 1/4 inch and the bees would tend to propolise the two pieces together, and if larger, the bees tend to build burr comb between them. Burr comb or propolis won't kill your operation, and most of us simply put up with this as part of the job. But is this necessary? Is it a matter of mis-matched equipment, or something else?

Before I started I believed equipment manufactured in the United States was designed to have the top-bars flush with the top of the super and the 'bee-space' between the bottom of the bottom-bar and top of the top bars below.

MEDIUM SUPER

FRONT

	Length	Width	Hanging Depth	Rabbet Depth	Rabbet Width	Hand-hold Length	Hand-hold Depth	Hand-hold Indent	Hand-hold Distance from top
A.I. Root	16-1/4"	6-1/2"	5-5/16"	9/16"	3/8"	4-1/4"	1-5/8"	9/16"	2-3/16"
Brushy Mt.	16-1/4"	6-21/32"	6-1/32"	5/8"	3/8"	4"	1-3/4"	7/16"	2-1/16"
Dadant	16-1/4"	6-21/32"	6-1/32"	5/8"	3/8"	4-1/4"	1-3/4"	9/16"	2"
Kelley	16-1/4"	6-5/8"	6"	5/8"	3/8"	4-1/8"	1-3/4"	5/8"	1-13/16"
Mann Lake	16-1/4"	6-5/8"	6"	5/8"	3/8"	4-1/2"	1-3/4"	1/2"	1-5/8"
Miller	16-1/4"	na	na	5/8"	3/8"	4-1/8"'	1-5/8"	1/2"	2-11/16"
Rossman	16-1/4"	6-9/16"	5-15/16"	5/8"	5/16"	6-1/4"	1-1/2"	7/16"	2-1/4"
Western	16-1/4"	6-5/8"	6"	5/8"	3/8"	4-1/4"	1-3/4"	9/16"	2"

SIDE

	Length	Width	Hand-hold Length	Hand-hold Depth	Hand-hold Indent	Hand-hold Distance from top	Hand-hold type	Joints Type/Sz.	Knots	Wood Finish
A.I. Root	19-13/16"	6-1/2"	4-1/4"	1-5/8"	9/16"	2-1/2"	Undercut	Box-7/8"	None	Smooth
Brushy Mt.	20"	6-21/32"	3-7/8"	1-13/16"	7/16"	2-1/6"	Straight	Box-7/8"	None	Rough
Dadant	19-17/16"	6-21/32"	4-1/8"	1-3/4"	9/16"	2-1/16"	Straight	Box-7/8"	None	Smooth
Kelley	19-13/16"	6-5/8"	4"	1-9/16"	9/16"	1-13/16"	Straight	Box-7/8"	None	Smooth
Mann Lake	19-13/16"	6-9/16"	4-3/4"	1-3/4"	9/16"	1-5/8"	Undercut	Box-1"	Tight	Smooth
Miller	19-15/16"	na	4"	1-5/8"	1/2"	2-3/4"	Undercut	na	na	na
Rossman	19-1/8"	6-5/8"	5-1/2"	1-3/8"	5/16"	2-3/4"	Straight	Rab. jnt.	None	Smooth
Western	19-7/8"	6-21/32"	4-3/8"	1-13/16"	9/16"	1-15/16"	Straight	Box-7/8"	None	Smooth

	Notes	Price
A.I. Root	2,3,4	$15.90
Brushy Mt.	2,3,6	$7.75
Dadant	2,3,4	$10.44
Kelley	2,3,4,5	$6.45
Mann Lake	4	$3.90
Miller	1	$3.85
Rossman	4	$8.44
Western	2,4	$5.40

NOTES:

1. A medium super was not provided by the manufacturer for comparison.
2. Nails provided.
3. Instructions provided.
4. Pre-drilled nail pilot holes.
5. Hand-hold lip very rough.
6. Brushy Mountain also manufactures supers with a rabbeted/locking tenon joint.

According to the *Illustrated Encyclopedia of Beekeeping*, by Hooper and Morse, this is called 'Bottom Beeway Spacing'. In Europe, says Hooper and Morse, the bee-space is created by the frames setting lower in the rabbet, thus creating 'Top Beeway Spacing' If this space is violated, by being too wide or too narrow, your supers will be hard to separate due to the buildup of propolis or because of the burr comb between supers.

I found that apparently no one bothered to tell Americans how they were to build the hive. By taking a look at the chart entitled "How Frames Sit In Their Own Medium Supers", you can see that the *majority* of manufacturers provide a little space, both above and below the frames when they sit in their own supers. In fact, A.I. Root's frames sit low enough that by Hooper's and Morse's definition, they should be considered European in design, because the beeway space is created on top of the frames! Fortunately, because the other manufacturers provide a little space *above* their frames, this doesn't seem to cause a problem when they're mixed.

The two types of top bar ends (or ears, or lugs) Top, straight; bottom, tapered.

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Medium Frames

END BARS

	Length	Width	Thickness	Top Bar to Bottom Bar Length	Self Spacing	Finish (See Notes)
A.I. Root	6-5/16"	3/8"	5/16"	5-7/8"	Y	Smx2
Brushy Mt.	6-1/4"	3/8"	3/8"	5-13/16"	N	Smx2
Dadant	6-1/4"	3/8"	5/16"	5-3/4"	N	Smx2
Kelley	6-3/16"	3/8"	5/16"	5-11/16"	Y	Smx2
Mann Lake	6-1/4"	3/8"	3/8"	5-3/4"	N	Smx2
Miller	na	na	na	na	N	Smx1
Rossman	6-1/4"	3/8"	5/16"	5-13/16"	N	Smx1
Western	6-1/4"	3/8"	5/16"	5-3/4"	N	Smx1

TOP BAR

	Length	Width	Thickness	EB-EB	EB-Tip	Wedge Width	Ear Shape	Ear Width
A.I. Root	19"	1"	3/4"	17-5/8"	11/16"	1/8"	Tapered	7/16"
Brushy Mt.	19"	1-1/8"	3/4"	17-3/4"	5/8"	1/4"	Tapered	3/8"
Dadant	19"	1-1/16"	3/4"	17-5/8"	3/4"	1/4"	Tapered	3/8"
Kelley	19"	1"	3/4"	17-5/8"	11/16"	3/16"	Straight	3/8"
Mann Lake	19"	1-1/16"	3/4"	17-13/16"	5/8"	none	Tapered	7/16"
Miller	19"	1-1/16"	3/4"	17-11/16"	5/8"	none	Straight	7/16"
Rossman	19"	1"	3/4"	17-11/16"	11/16"	none	Tapered	7/16"
Western	19"	1-1/8"	3/4"	17-9/16"	3/4"	3/16"	Tapered	7/16"

BOTTOM BAR

A.I. Root	Double
Brushy Mt.	Slotted
Dadant	Grooved
Kelley	Double
Mann Lake	Grooved
Miller	Grooved
Rossman	Grooved
Western	Split

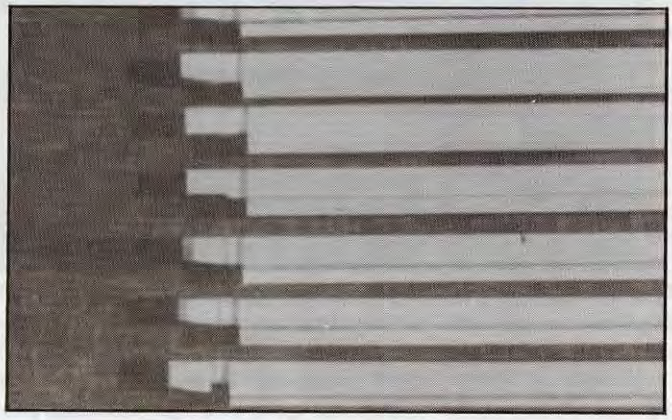
	Notes	Price/Frame
A.I. Root	1,2,5,7	$1.61
Brushy Mt.	4,5,7	$0.50
Dadant	3,4,5,7	$1.41
Kelley	4,5,6	$0.50
Mann Lake	7	$0.38
Miller	7	$0.35
Rossman	7	$0.85
Western	5,7	$0.35

Abbreviations Used:

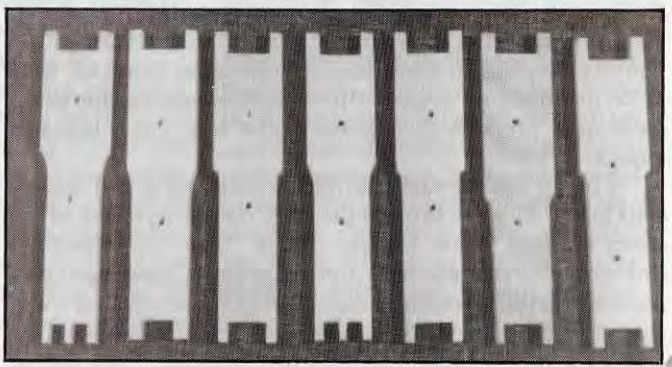
EB	End Bar
na	Not Available
Sm	Smooth

NOTES:

1) 1 mis-cut end bar. 2)Pilot holes drilled in bottom bar ends. 3) Came with 22 end bars, instead of 20. 4) Instructions for assembly included. 5) Nails provided. 6) Slotted nail guides in bottom bars. 7)Wiring holes provided in end bars.



End bar ends, profile (Top to Bottom) A.I. Root, Brushy Mtn., Dadant & Sons, W.T. Kelley, Mann Lake, Rossman Apiaries, Western Bee Supply (Miller not shown).



Side bars (left to right) A.I. Root, Brushy Mtn., Dadant & Sons, W.T. Kelley, Mann Lake, Rossman Apiaries, Wetern Bee Supply (Miller not shown). Note shoulder height differences. Side by side, some frames don't match well.

While making these comparisons, Brushy Mountain's frames were kept in Brushy Mountain's super, Dadant's frames were kept in Dadant's super, and so forth. The task of comparing a Mann Lake super full of Rossman frames while sitting on an A.I. Root Super full of Kelley frames was not attempted, purely for sanity's sake. The actual possible number of frame and super combinations, without repeating, exceeds 6.4×10^{19} combinations. That's 6.4 with 19 zeros after it! I did calculate the bee-space between a manufacturer's super full of their frames on top of another manufacturer's super of frames. This comparison is in the chart "Super Interchangeability." Most are interchangeable, but some aren't.

You will note, in some instances, a bee-space violated by 1/32 of an inch. This may be splitting hairs, and I wouldn't think it should stop you from either buying this equipment or from interchanging it with other suppliers. But it was what I found, and thought it worth noting. This small difference may be attributed to a blade that needed to the sharped or replaced, and once done, would be back to spec. Equipment you purchase may not have this problem.

The tops and inner-covers provided other areas of interest. All of the tops I examined were the telescoping type. They completely cover the top super and extend over the four sides by a couple of inches. If you do not use an inner-cover, as many don't, note the hand-hold distance from the top of the super and the Inside Depth of the cover. These measurements can be found in the charts. If the hand-hold distance is less than the inside depth measurement, then the top will extend down over the top edge of the hand-hold. Because of this, you won't get a decent grip on the top super with the outer cover in place. However, if you use an inner-cover you shouldn't have any problem with the top and hand-hold.

Inner-covers are a bit different. You need to pay attention to what you're doing to avoid burr comb being built on these. Bees build burr comb when they need the extra comb and there is a space larger than 3/8 of an inch in which to build it. If you take a look at the table describing inner-covers, called, "Inner Cover vs. Super Interchangeability: What It Means", you'll find that, of the five inner-covers I received, four would be useable during the summer on the flat side or "side 1" as indicated in the chart. This would avoid any build up of burr comb. I was surprised that the inner cover from Mann Lake exceeded the bee-space on any super of frames, including their own, no matter what side was placed down.

Bottom boards were all pretty much the same in design and quality. But there is one aspect about their design I don't understand. Both Brushy Mountain and Western make their bottom boards wider than a super. With the bottom board sticking out it serves as an ideal water collector. Granted, few hives are ever put together so perfectly that no edges protrude or overlap, but it seems to me a simple matter to make everything a standard width.

All the bottom boards were the 'reversible' type, which enables you to select what height you want for the open-

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Inner Covers

	A.I.Root	Brushy Mt.	Dadant	Kelley	Mann Lake	Miller	Rossman	Western
Front Length	16-3/16	16-1/4	16-1/4	16-1/4	16-1/16	na	na	na
Side Length	19-7/8	19-7/8	19-7/8	19-3/4	19-3/4	na	na	na
Width	1-3/32	1-7/16	1-1/8	1-1/16	7/8	na	na	na
Outside Depth	3/4	3/4	3/4	3/4	7/8	na	na	na
Inside Space #1	7/16	7/16	3/8	3/8	1/2	na	na	na
Inside Space #2	0	0	1/8	0	1/4	na	na	na
Inside Material	3 pc. T&G	1 pc. CDX	1 pc. 1/4 Mas	3 pc. T&G	1 pc. 1/4 Paneling	na	na	na
Joint	M&T	Rabbetted	M&T	Rabbetted	M&T	na	na	na
Notes	2,3,4,5	1,5	2,3,5	1,5	1,5			
Price:	$8.50	$5.25	$7.70	$5.75	$4.85	na	6.88	na

Abbreviations Used:

CDX	Plywood
M&T	Mortise and Tenon
Mas	Masonite
na	No inner cover was provided by the manufacturer.
T&G	Tongue and Groove

NOTES:

1. Inner-cover came pre-assembled.
2. Nails provided.
3. Instructions provided.
4. Provided with half-moon ventilation hole on front rim.
5. Bee escape accepted standard Porter bee escape.

Telescoping Outer Covers

	A.I.Root	Brushy Mt.	Dadant	Kelley	Mann Lake	Miller	Rossman	Western
Front Length	18-1/8	18-1/4	18-1/8	18-5/16	18-1/4	na	18-1/8	na
Side Length	21-7/8	22-1/16	21-7/8	21-7/8	21-7/8	na	21-3/4	na
Outside Depth	2-9/16	2-3/8	1-7/8	2-3/8	2-11/16	na	2	na
Inside Depth	2-1/16	2	1-5/8	1-5/8	2-3/8	na	1-1/4	na
Cover Material	Galvanized	Aluminum	Galvanized	Aluminum	Painted Metal	na	Galvan.	na
Inside Material	1/2 4 pc. T&G	3/8 CDX	1/4 Mason.	3/4 2 pc.T&G	5/16 Chipbd.	na	3/4 2 pc.T&G	na
Joint	Box	Box	Box	Finger	Box	na	Box	na
Notes	**2,3,4**	1	2,3,4	2,3,4	1	5	na	na
Price	$17.25	$9.25	$18.10	$9.30	$9.95	na	$11.87	na

Abbreviations Used:

NA	Not Available for evaluation
pc.	Piece
T&G	Tongue and Groove

NOTES:

1. Top or inner-cover came pre-assembled.
2. Nails provided.
3. Instructions provided.
4. Pre-drilled nail pilot holes.
5. Manufacturer provided only flat/migratory cover.

The Real World: Super Interchangebility

	A.I.Root	Brushy Mt.	Dadant	Kelley	Mann Lake	Rossman	Western
A.I.Root	3/16	1/4	3/16	1/4	1/4	1/4	1/4
Brushy Mt.	11/32	13/32	11/32	13/32	13/32	13/32	13/32
Dadant	13/32	15/32	13/32	15/32	15/32	15/32	15/32
Kelley	3/8	7/16	3/8	7/16	7/16	7/16	7/16
Mann Lake	5/16	3/8	3/16	3/8	3/8	3/8	3/8
Rossman	1/4	5/16	1/4	5/16	5/16	5/16	5/16
Western	5/16	3/8	5/16	3/8	3/8	3/8	3/8

How to read this chart:

Chose the manufacturer from the Left hand column and follow across to the medium super you would be placing the super on top of. The measurement given is the distance from the bottom of the frame bottom bar to the top bar in the super below. This chart assumes that each super contains frames of same make.

The Real World - Super Interchangebility: *What it Means...*

	A.I.Root	Brushy Mt.	Dadant	Kelley	Mann Lake	Rossman	Western
A.I.Root	ok	ok	ok	ok	ok	ok	ok
Brushy Mt.	ok	1/32 too big	ok	1/32 too big	1/32 too big	1/32 too big	1/32 too big
Dadant	1/32 too big	1/16 too big	1/32 too big	1/16 too big	1/16 too big	1/16 too big	1/16 too big
Kelley	ok	1/16 too big	ok	1/16 too big	1/16 too big	1/16 too big	1/16 too big
Mann Lake	ok	ok	ok	ok	ok	ok	ok
Rossman	ok	ok	ok	ok	ok	ok	ok
Western	ok	ok	ok	ok	ok	ok	ok

How to read this chart:

Chose the manufacturer from the Left hand column and follow across to the medium super you would be placing the super on top of. This chart assumes that each super contains frames of the same make. If the super of frames is interchangeable, then you'll find an 'ok' If it is not, you'll find the size difference.

Inner Cover vs. Super Interchangebility

	A.I.Root		Brushy Mt.		Dadant		Kelley		Mann Lake	
	1	2	1	2	1	2	1	2	1	2
A.I.Root	7/16	3/16	5/8	3/16	9/16	5/16	9/16	3/8	11/16	7/16
Brushy Mt.	11/16	1/4	11/16	1/4	5/8	3/8	5/8	1/4	3/4	1/2
Dadant	7/16	3/16	5/8	3/16	9/16	5/16	9/16	3/8	11/16	7/16
Kelley	11/16	1/4	11/16	1/4	5/8	3/8	5/8	1/4	3/4	1/2
Mann Lake	11/16	1/4	11/16	1/4	5/8	3/8	5/8	1/4	3/4	1/2
Rossman	11/16	1/4	11/16	1/4	5/8	3/8	5/8	1/4	3/4	1/2
Western	11/16	1/4	11/16	1/4	5/8	3/8	5/8	1/4	3/4	1/2

How to read this chart:

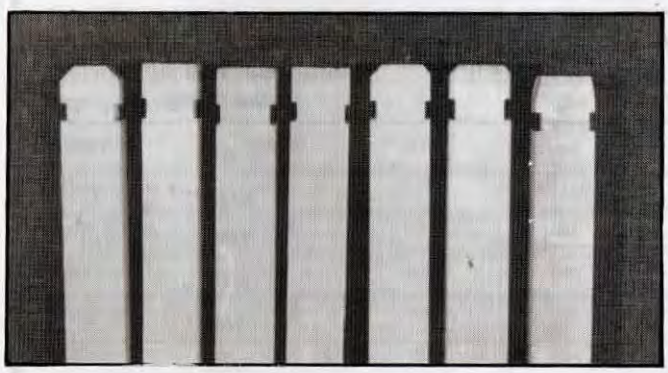
Chose the medium super manufacturer in the Left hand column and then read over to the inner-cover manufacturer to find the space created between the inner-cover and the top on the frames. Inner-cover space marked as "1" is the Deeper space on the inner-cover and the inner-cover space marked as "2" is the shallower side of the inner-cover.

Inner Cover vs. Super Interchangebility: *What it means*

	A.I.Root		Brushy Mt.		Dadant		Kelley		Mann Lake	
	1	2	1	2	1	2	1	2	1	2
A.I.Root	1/16 TB	ok	1/4 TB	ok	3/16 TB	ok	3/16 TB	ok	5/16 TB	1/16 TB
Brushy Mt.	5/16 TB	ok	5/16 TB	ok	1/4 TB	ok	1/4 TB	ok	3/8 TB	1/8 TB
Dadant	1/16 TB	ok	1/4 TB	ok	3/16 TB	ok	3/16 TB	ok	5/16 TB	1/16 TB
Kelley	5/16 TB	ok	5/16 TB	ok	1/4 TB	ok	1/4 TB	ok	3/8 TB	1/8 TB
Mann Lake	5/16 TB	ok	5/16 TB	ok	1/4 TB	ok	1/4 TB	ok	3/8 TB	1/8 TB
Rossman	5/16 TB	ok	5/16 TB	ok	1/4 TB	ok	1/4 TB	ok	3/8 TB	1/8 TB
Western	5/16 TB	ok	5/16 TB	ok	1/4 TB	ok	1/4 TB	ok	3/8 TB	1/8 TB

How to read this chart:

Chose the medium super manufacturer in the Left hand column and then read over to the inner-cover manufacturer to determine the interchangebility of the manufacturers parts. Inner-cover space marked as "1" is the Deeper space on the inner-cover and the inner-cover space marked as "2" is the shallower side of the inner-cover. TB = Too Big



Top Bars, top view (left to right) A.I. Root, Brushy Mtn., Dadant & Sons, W.T. Kelley, Mann Lake, Rossman Apiaries, Western Bee Supply (Miller not shown).

Bottom Bar Configurations (top to bottom) Western, slotted; Rossman Apiaries, grooved; Mann Lake, grooved, ends reduced; W.T. Kelley, split, grooved for nails; Dadant & Sons, grooved; Brushy Mtn., slotted, ends reduced; A.I. Root, split, guide holes provided.

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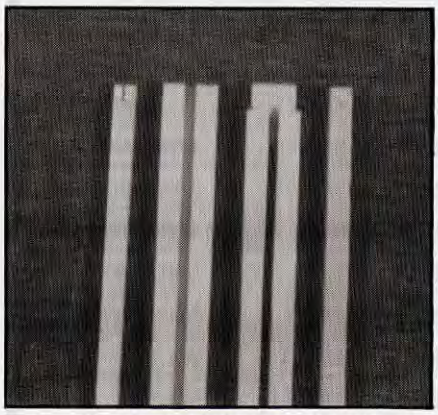
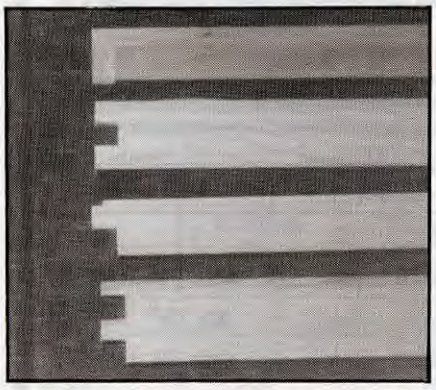
WOODEN ... Cont. From Pg. 85



Bottom Bar Types. (left to right) Split, with groove for nail guide; grooved; slotted, reduced end; split, pilot hole for nail.



Joint types for outer covers. (top to bottom) Rossman, Kelley, Dadant & A.I. Root.

ing of the hive. All bottom boards had at least a 3/8" opening, but the reverse opening varied from 1/2" to 7/8" If you have several different makes of bottom boards, you may have a frustrating time when you want to reduce the entrance with an entrance reducer. Some won't fit because they were made to fit another size opening. You can overcome this inconvenience, but it points out another problem between the manufacturers.

On another note, not all manufacturers supplied assembly instructions and/or nails with their kits. Only Western threw a catalog in the box, while Root enclosed a flyer on being a good beekeeping neighbor. Perhaps you may not need these little extras, but they are good to have if you're new to beekeeping. All of the prices listed in the charts are from 1991 catalogs. Check with the manufacturer for more current prices.

All of the wood I received was of a good quality. The prices varied considerably for any given piece of equipment, though. Generally, the more you pay, the finer the finish on the equipment will be. Don't be too misled by very low prices though, because you still pay for shipping. Find out what is available locally. It may be cheaper to buy your equipment from a local bee supply outlet or dealer than sending across the country for the same stuff. Besides, by buying locally you will most likely increase your beekeeping contacts and you may find a friend or two. If your local bee supply outlet doesn't sell a brand I've listed in the charts, measure what you want to buy and see how compatible it will be with what they have.

I did not find as great a difference in the dimensions as I thought I would but I found enough to make it worthwhile. It would pay, in the long run, to stay with one manufacturer, but understanding how difficult this may be, try and stay within the same dimensions when possible. Protect your equipment with a wood preservative and then paint it with a good quality paint or stain. Treat it gently. Not only will you extend its life, you will also put less stress and strain on yourself and the bees.

One final thought. I'd be interested in hearing about your experiences with woodenware, uncappers and extractors. I'd like to hear it all, both good and bad. Although not scientific we could build a 'Reader's Poll' or 'Consumer's Opinion' of the equipment available to beekeepers today. If I receive enough I'll share the results in a future issue of *Bee Culture*. Send comments or criticisms to the magazine and they'll forward them to me. □

How Frames Sit In Their Own Medium Supers

	Distance Between Top Bar and Top Edge of the Super	Distance Between Bottom Bar and Bottom of the Super
A.I.Root	3/16	0
Brushy Mt.	1/4	5/32
Dadant	3/16	7/32
Kelley	1/4	3/16
Mann Lake	1/4	1/8
Rossman	1/4	1/16
Western	1/4	1/8

How to read this chart:
This chart shows the relationship of each manufacturer's frame in their own medium super. The first column shows the distance between the top bar and the top of the super and the second column shows the distance between the bottom bar and the bottom of the super.

The Perfect World – End Bar Length vs. Super Width

	A.I.Root	Brushy Mt.	Dadant	Kelley	Mann Lake	Rossman	Western
A.I.Root	3/16	11/32	11/32	5/16	5/16	1/4	5/16
Brushy Mt.		13/32	13/32	3/8	3/8	1/8	3/8
Dadant			13/32	3/8	3/8	1/8	3/8
Kelley				7/16	7/16	3/8	7/16
Mann Lake					3/8	1/8	3/8
Rossman						5/16	3/8
Western							3/8

How to read this chart:
Chose the frame manufacturer from the Left hand column and follow across to the medium super you want to evaluate it against. The measurement given is the distance from the bottom of the frame bottom bar to the bottom edge of the super. This assumes that the top of top bar is flush with the top edge of the super: thus the title of "In the perfect world..." because it never seems to work that way.

The Perfect World - End Bar Length vs. Super Width: *What it Means...*

	A.I.Root	Brushy Mt.	Dadant	Kelley	Mann Lake	Rossman	Western
A.I.Root	ok	ok	ok	ok	ok	ok	ok
Brushy Mt.		1/32 too big	1/32 too big	ok	ok	1/8 too small	ok
Dadant			1/32 too big	ok	ok	1/8 too small	ok
Kelley				1/16 too big	1/16 too big	ok	1/16 too big
Mann Lake					ok	1/8 too small	ok
Rossman						ok	ok
Western							ok

How to read this chart:
Chose the frame manufacturer from the Left hand column and follow across to the medium super you want to evaluate it against. If the frame is interchangeable, then you'll find an 'ok'. If it is not, you'll find the size difference.

End Bar Length Difference

	A.I.Root	Brushy Mt.	Dadant	Kelley	Mann Lake	Miller	Rossman	Western
A.I.Root	-	>1/16	>1/16	>1/8	>1/16	na	>1/16	>1/16
Brushy Mt.	<1/16	-	-0-	>1/16	-0-	na	-0-	-0-
Dadant	<1/16	-0-	-	>1/16	-0-	na	-0-	-0-
Kelley	<1/8	<1/16	<1/16	-	<1/16	na	<1/16	<1/16
Mann Lake	<1/16	-0-	-0-	>1/16	-	na	-0-	-0-
Miller	na	na	na	na	na		na	na
Rossman	<1/16	-0-	-0-	>1/16	-0-	na	-	-0-
Western	<1/16	-0-	-0-	>1/16	-0-	na	-0-	-

How to read this chart:
Chose the frame manufacturer in the left hand column and follow across to the the right until you find the frame you want to compare it to. A GREATER THAN sign (>) indicates that the frame in the left column is GREATER than the the selected frame by the fraction indicated. A LESS THAN sign (<) indicates the frame in the left column is LESS than the the selected frame by the fraction (in inches) indicated.

SELLING HONEY

At Craft Fairs & Flea Markets

BILL HOLDEN

CRAFT FAIRS AND FLEA MARKETS ARE PERFECT FOR ANYONE WHO DOESN'T PRODUCE ENOUGH FOR 'YEAR-ROUND' GROCERY STORE SALES, BUT NEEDS TO SELL HONEY.

I have been successful selling honey at craft fairs and flea markets, so when I read in the August, '91 *Bee Culture*, articles on selling honey at Farmer's Markets, I thought the areas I work in should be explored. So, here are a few of the tricks I use.

In our area there is a Register of Craft Shows sold listing all the shows in Kansas. One is available for Missouri as well. Your area probably has one, too. These books are worth the price because you have a complete list of events for an entire year and you can set up your calendar in advance, avoiding conflicts and last minute rushes. The Register tells where and when a sale occurs, who the sponsor is, the cost, attendance last year and who to contact for space. This gives a pretty good idea of what to expect for your time and money.

These types of outlets are generally for small producers who do not make enough honey for grocery stores or supermarkets who want a year-round supply. You will find a wide range of charges for space. Some run for one day, some for two days and even longer. Prices usually reflect length of time. Some furnish tables and chairs, but at others you have to bring your own. As a rule, you can figure that the larger events charge more and you will sell more, but this is not always the case. You need to pick a few and try them out, limit your return calls to those that serve you best. One of my more productive craft sales is one that costs less than most of the larger ones I attend. When sales don't cover the cost of attendance find another one.

The honey you sell at your display is not the only consideration for being at a craft sale however. Exposure is another key factor. I get many return sales at home, especially for comb honey, from customers who met me at a market or craft sale. I keep a list of people who want comb honey and call them when the new crop comes in.

I do not usually have large containers at craft sales but I do add those who ask for them to my list of home customers.

Honey sells best at craft sales from late summer until late December, which gives you a chance to sell it for Christmas giving. There are some craft sales around Easter and in the spring but I have not found them to be particularly profitable unless I have an over supply of honey.

Some sales will be outside. You may want some type of shade, which you will have to furnish yourself in the form of an umbrella or tent of some sort. Most are inside, however.

For inside sales pick a location close to the door if possible. Honey is heavy and most people do not want to carry it around. Let them pay for it when they enter and you can set it back in a sack with their name on it. Then they can pick it up as they leave. Another good location is a spot that confronts customers when they enter the door. Be what they see first and get their attention. Drape your table with a bright cloth so it looks neat and attractive.

I have also made a light box display. A plywood box about eight inches tall and the same wide, and five feet long sits on my table. It has a plexiglass top and two oblong slots about three inches wide that each run half the length of the box cut into the front. There is a solid piece in the center between the two slots that gives the box stability. It has a 60w, one bulb fluorescent light fastened to the inside of the back. The inside is painted white, and it has a dark, natural wood finish on the outside. You can set jars of honey on the top and the light shines up through them. You can also place a row of jars in front of the slots and they light up like Christmas lights. It is a real eye catcher. This is used on inside locations only. It has little advantage outside in the sun.

Use your local bee organization's honey queen if they have one. Have her visit your exhibit, help you sell honey, talk to customers, distribute recipe folders and walk around the show and attract attention. In our Northeast Kansas Beekeeper's organization we have such a program and the

Bedeck your table in a bright cloth, a well stocked display, (with a light box if possible), a sign selling honey and samples to taste.

To spice things up, and increase sales, add some 'extras'. Homemade candy, wheat weavings, an observation hive, and maybe even a honey queen all add to the show, and add to the profits.

honey queen has recipe folders with her picture included. These attract a lot of attention among some customers, and they promote future honey sales. Be sure and stamp your name, address and phone number on the back.

If you have several kinds of honey available get a package of inexpensive plastic spoons and a honey bear of each kind of honey you have. When someone asks about the different kinds or colors of honey, give them a spoon and taste of each kind. It only takes a drop or two to let them taste it. Don't give them a spoonfull or it will overwhelm them and they cannot accurately taste the next sample. Just a tiny bit does a great job. I usually have an assortmrnt such as clover (light), clover and wild flower mix (medium or light amber), wild flower (dark) and bluevine (light but cloudy and very sweet) or other local varieties. Once they have tasted both, or at most three (never give more than two tastes if you can avoid it), ask which they liked best, and how much they would like. If they aren't sure, ask which they thought was best and give a second taste. That second taste will sell a lot of honey.

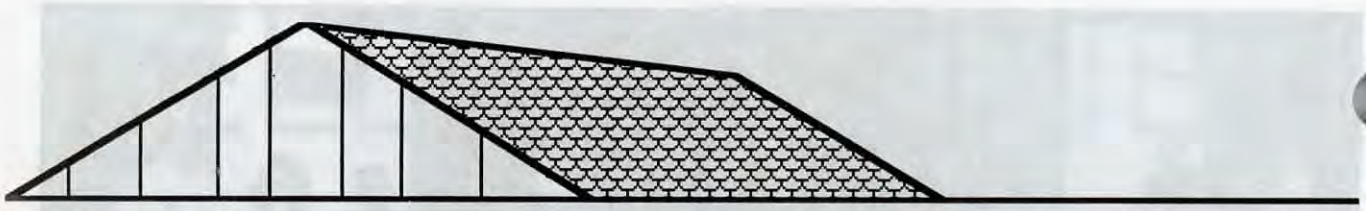
Use your labels to best advantage. My label says "Pure Kansas Honey", and I also belong to an organization called "From The Land Of Kansas Companies" They promote Kansas products and provide a large logo sticker which I place on every bottle or package of comb honey. This promotes a lot of sales. I get orders for six to 12 and more bottles from people making gift packs to send both locally and out of state.

You may want to carry other products along with your honey. My daughter makes wheat weaving and I sometimes sell them, too. Honey sticks sell very good. I also make a special 'pulled' peanut brittle which sells very well, and at one craft sale last year I sold over 100 pounds. Each item you sell brings in a potential buyer for the other products you have available. Don't over do it though. If you are selling 'honey' you don't want to crowd it out with other products.

A word of caution on etiquette. Some shows will support two honey dealers, but not many. Don't knowingly move in on someone who is established in a show. If you have paid your fee and find there was already an established dealer there (and you did not know about him), deal the show but don't go back the next time. Some years ago there was a show with two dealers, one of which was a close friend of mine. When he quit the show I took his place. Later the other dealer quit and my friend came back for several years. We made the show together as close friends but always talked to the management and had them place us in different areas so we did not directly compete with each other.

Last, but not least, there is a feeling of euphoria when you sell your product to satisfied customers who return to buy more. Let them know it is *your* product from your bees. There are the old friends who stop by to chat, new friends made, and people excited about the different flavors, or a new one they have never tasted before. And there is the satisfaction of making a family project out of it. You can bring in everyone – even the grandkids – and make them feel they have a part in the project. And there are all the friends you get to know among the other craft people. You may even want to swap some of your honey for some other products.

There's a whole new world out there and it's just waiting for you. □



HOME HARMONY

ANN HARMAN
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IN DEFENSE OF BROCCOLI

"What's one man's poison, signor, is another's meat or drink." Thus, back in 1600, did Beaumont and Fletcher acknowledge that we all have differences in taste.

At home the comment "you know I can't stand the stuff" which turns to a polite "no, thank you" for company, signifies our dislike for certain foods. As children we devised ways to hide a hated vegetable, or to slip it to the dog. As adults we simply walk by the display in the grocery store, knowing that no authority now exists to say "Eat it!, it's good for you"

Is there something that causes us to taste foods differently, or is it a creation of our imagination? The honest truth is that some foods, particularly vegetables, taste simply *awful* to some people and taste delicious to others. Furthermore, you are *born* with that trait and you inherited it from your ancestors and you may pass it to your children.

Considerable research was done in the 1930's on our ability to taste various substances present in foods. Along with the taste testing were genetic studies to see if our sense of taste had inheritable traits. Basically people can be simply classified as tasters of certain substances, or nontasters. However, many people are sensitive to the *amount* of the substance present. That is, a very small amount of a substance may produce no taste, while a greater quantity may be tasted. This is why some people may say a certain food is "OK, but not my favorite", while others are saying "ugh!" or "yum!"

One food group, known for its lovers and haters are the Brassicas: broccoli, brussel sprouts, cabbages, cauliflower, Chinese cabbages, collards, kales, kohlarabi and mustard greens. Right now, some reader has exclaimed "ugh!" and turned to another page. As beekeepers, however, we must acknowledge that Brassicas and honey bees make a good team.

Honey bees are essential for seed production for all these crops. If you grow broccoli in your vegetable garden next summer, let one or two plants blossom after you have picked the main crop. You will be rewarded with watching hundreds of honey bees visit the colorful yellow blossoms for both pollen and nectar. Even if you dislike broccoli, grow one or two plants just to be able to watch honey bees at work.

> Many cooks use only the florets of broccoli and cauliflower for raw "dunkers" in a delicious dip. Left are the stems, which can be tender, but are more likely tough and stringy. These are too nutritious to simply discard, though. The stems and leaves can be used to make delicious soups, such as a cream of broccoli or cauliflower. Chop the stems into small pieces to take care of any tough parts and proceed with your favorite cream soup recipe. Chicken stock is perfect as the soup base. If you do not wish to make soup, diced broccoli or cauliflower stems can be added to augment a cooked dish.

A substance exists in the Brassicas, in varying amounts, that we shall call PTC. (Its chemical name is phenylthiocarbamide.) To most people PTC is extremely bitter, to others it is absolutely tasteless. About 30% of Americans are nontasters.

What does this bitter PTC have to do with our eating habits? For those people who can taste it members of the Brassica family will taste *terrible*. However, those PTC tasters may find that broccoli is particularly offensive, or brussels sprouts, but that cabbage or the Chinese cabbages aren't so bad. Here, the *quantity* of PTC in the vegetable influences its taste.

Other substances occur in our foods that produce different taste responses. Sodium benzoate is used as a preservative in some foods, notably soft drinks, but some states regulate the use of the substance as a preservative. It can be tasted by about 3/4 of the population. However, the results of tasting are different from PTC. Sodium benzote, for those who taste it, can be 1) salty, 2) sweet, 3) sour, or 4) bitter. Since the amount used is very, very low, it would be difficult for us to taste it, especially in combination with the actual food flavor.

Researchers did find, however, that PTC-tasters who found sodium benzoate bitter disliked such foods as sauerkraut, buttermilk, turnips, and spinach, as well as all the Brassicas. No wonder that some of these foods are shunned by many.

Vegetables have been mentioned – what about meats? Lean meat naturally contains a substance known as creatine. To some this is tasteless, but to others it is bitter. That's why you prefer some meat flavors over others.

One more interesting item came from researchers in taste. Some people who have needed a "GI X-ray" have been handed a "barium milkshake" to drink before the x-rays begin. Usually the nurse reassures you by saying "it tastes good" Unfortunately to some this innocent "milkshake" tastes *quite* bitter, but to others it is tasteless. If the

"shake" tastes bitter to you, not much can be done to disguise it.

Will we "grow out of" our ability to taste the bitter compounds in vegetables? **No.** It's for life. Can we disguise or hide the bitter taste of these vegetables? Not really. You can douse a serving of broccoli in a delicious sauce, but when you eat it the bitter taste is still there, no matter *what* is done. Rather, serve the sauce on a preferred vegetable and enjoy every mouthful.

If you would like to experiment with your sense of taste, or if you want to convince a family member that broccoli really is horrible to have for dinner, I can furnish you with taste papers, designed for taste testing. They are thin, tissue-like strips impregnated with a small amount of PTC or sodium benzoate. A plain, non-impregnated paper is included in the set as a control. Taste-testing your family is fun, interesting and educational, especially if you can include relatives. If you wish a set of these taste papers, send me a self-addressed, stamped envelope and please tell me how many sets you would like to have. There is no charge for these.

Now, if you are curious – am I a taster or not? No, I cannot taste PTC and I think broccoli and the other Brassicas are delicious, raw or cooked. However, a number of my friends are tasters so I do not serve Brassicas when they come to dine.

For those nontasters, I have a couple of interesting recipes using those controversial foods.

Maryland Sweet 'N Sour Sauerkraut

1/2 cup butter
1 large onion, chopped
2 Granny Smith apples, peeled, diced
1 32-oz. bag sauerkraut, rinsed and drained
18-oz. can crushed tomatoes, undrained
3/4 cup honey
1/2 cup dry white wine, optional
1 Tbs. caraway seeds
freshly ground black pepper to taste

Melt butter in large skillet over medium-high heat. Add onion and apples; saute until softened, 3 to 5 minutes. Combine onion and apples with sauerkraut in large mixing bowl. Stir in tomatoes, honey and wine. Season with caraway and black pepper. Transfer mixture to 9 x 13 inch baking dish. Cover tightly with foil and bake 1-1/4 hours at 325°. Uncover and bake another 1/2 hour. Serve as side dish to roast turkey. Serves 12.
adapted from Mid-Atlantic Poultry Farmer

Braised Broccoli

1 bunch broccoli
3 Tbs oil
2 chopped scallions
2 Tbs soy sauce
1 Tbs gin
1 tsp honey
1/4 tsp season salt
1/4 cup boiling water

Remove tough ends of broccoli; cut broccoli into thick lengthwise stalks. Heat oil in skillet; saute scallions and broccoli. Add rest of ingredients, cover and cook 5 minutes over low heat. Stir occasionally. Do no overcook. Serves 4
adapted from The Encyclopedia of Creative Cooking
ed. Charlotte Turgeon

REPAIR!

DON'T REPLACE

No matter how well you did last year, there's no denying that money's tight right now. And, according to the experts, it's going to get worse before it gets better.

So rather than spend a few more bucks on this hobby of ours (and keep them home instead), now is a good time to renew some of those old frames that have been sitting out there in the shed for the last couple of years.

Remember the last time you thought about this task? The energy of good intentions was quickly dampened, when you were confronted by the disarray of broken combs, missing bottom bars, broken side bars, wire all over the place, wax moth cocoons and sticky puddles and

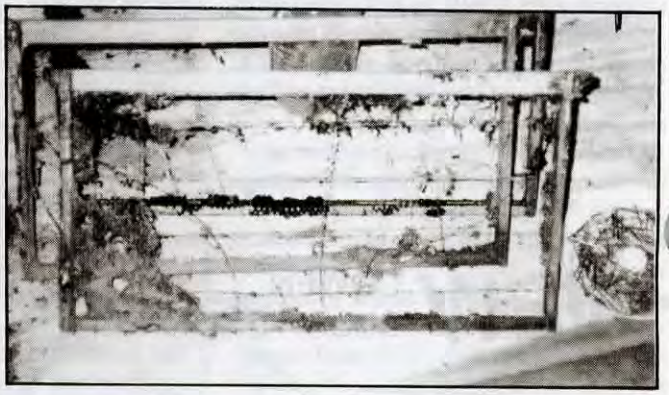
But now, it's cost effective to spend a bit of time fixing and repairing and making those frames like new. What with increasing prices of replacements, rising postal costs, and little complementary increase in the honey we sell, the buck's gotta stop somewhere – and a Saturday afternoon in the shop is the perfect place. So let's fix some frames this weekend

Before you start, assemble all the tools you'll need. A medium-sized hammer, or a magnetized tack hammer works well for putting in replacement nails or removing old ones. A frame cleaner is indispensable. This is an inexpensive little tool, specially made to just fit in those hard to reach grooves (not shown).

A needle-nosed pliers is perfect for tightening wires when rewiring (unless you have a jig, but it's still good for getting at those impossible-to-reach nails).

A hive tool. Useful for a million tasks, especially for this job. Frame nails – both sizes, lots and lots of them. Wood glue for repairing and replacing frame parts and pieces. The last tool is a bee brush. Each frame you clean and repair leaves all sorts of bits and pieces of wax, propolis, bent nails, wood slivers and other 'detritus'. A brush moves them away with ease, and keeps your work area neat, clean and easy to work on.

Speaking of work areas, make sure you have a large, solid surface to work on, relatively smooth so it cleans easily, well lighted, and if you're out in the shop or garage this time of year – well heated.



Frames that blew out when extracting, that had the top bar pried off when you were over anxious, the bottom bar(s) pulled off when it stuck to the frame below, or just plain old are perfect candidates for a Saturday afternoon.

Start by removing all the old comb. Get the big stuff out of the way first.

Using your hive tool, (or other suitable scraper) next remove the wax and propolis from the inside of the end bars. This means, of course that any wire and nails will need to go, as will foundation pins or other foundation 'holders' (nails, bobby pins and the like). Brush away the garbage when finished.

Not all frames go as well as planned. Often one of the bottom bars is broken, or missing. Sometimes the top bar has pulled off, and in a rush to remove the frame the side bar will break or split. Sometimes you'll find support pins, nails and the like used to hold the original piece of foundation. These should be removed when cleaning.

Next, clean off the bottom bar(s). If you have split bottom bars be careful not to break one when cleaning the groove between. This is where that special frame tool cleaner is perfect. It's made to fit this space.

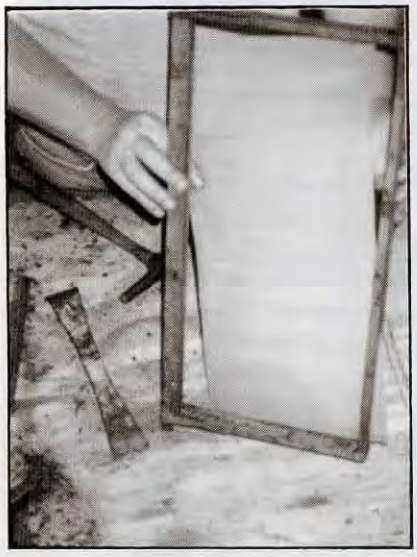
Carefully remove the wedge bar on top, and clean the top bar. Be sure you get the nails, too. You can get replacement wedges if you need, but use some of the old ones if you can.

When replacing bottom bars be sure to use a good quality wood glue to hold them in place when in use later.

If your frame doesn't have that 10th nail, the one going from the outside of the end bar into the top bar, add one now. Use the long frame nails. This will hold the top bar on when you pry it up to examine.

Continued on Next Page

Once your frame is clean and completely rebuilt, it's time to rewire (if you choose to do this). Insert or replace eyelets first. Some wire without a jig, one at a time. Wire in your usual manner – fasten the wire with a nail, string the wire through the holes, pull tight, tight, tighten and fasten to another nail. When fastened, bend the nail away from the direction the wire came from to add a little more tension.



Next, insert the foundation, making sure the wire 'hooks' are on top, and the bottom fits snug in the slot or groove.

A recycled frame. The foundation's embedded and well fastened top and bottom. The top, sides and bottom are secure too, and will last years in a hive. And you can be confident when extracting that it won't blow out, won't pull apart when you lift to examine, and won't fall apart when you hold it up to look for eggs and brood.

When inserted, replace the wedge, either the one removed and cleaned or a new one. A trick often used is to put the date under the wedge using a pencil. You'll have a written record of that frame's life.

There's something very satisfying about holding a solid, well made (and repaired) frame up to the light and admiring your handiwork. And think of the money you saved. □

FLORIDA

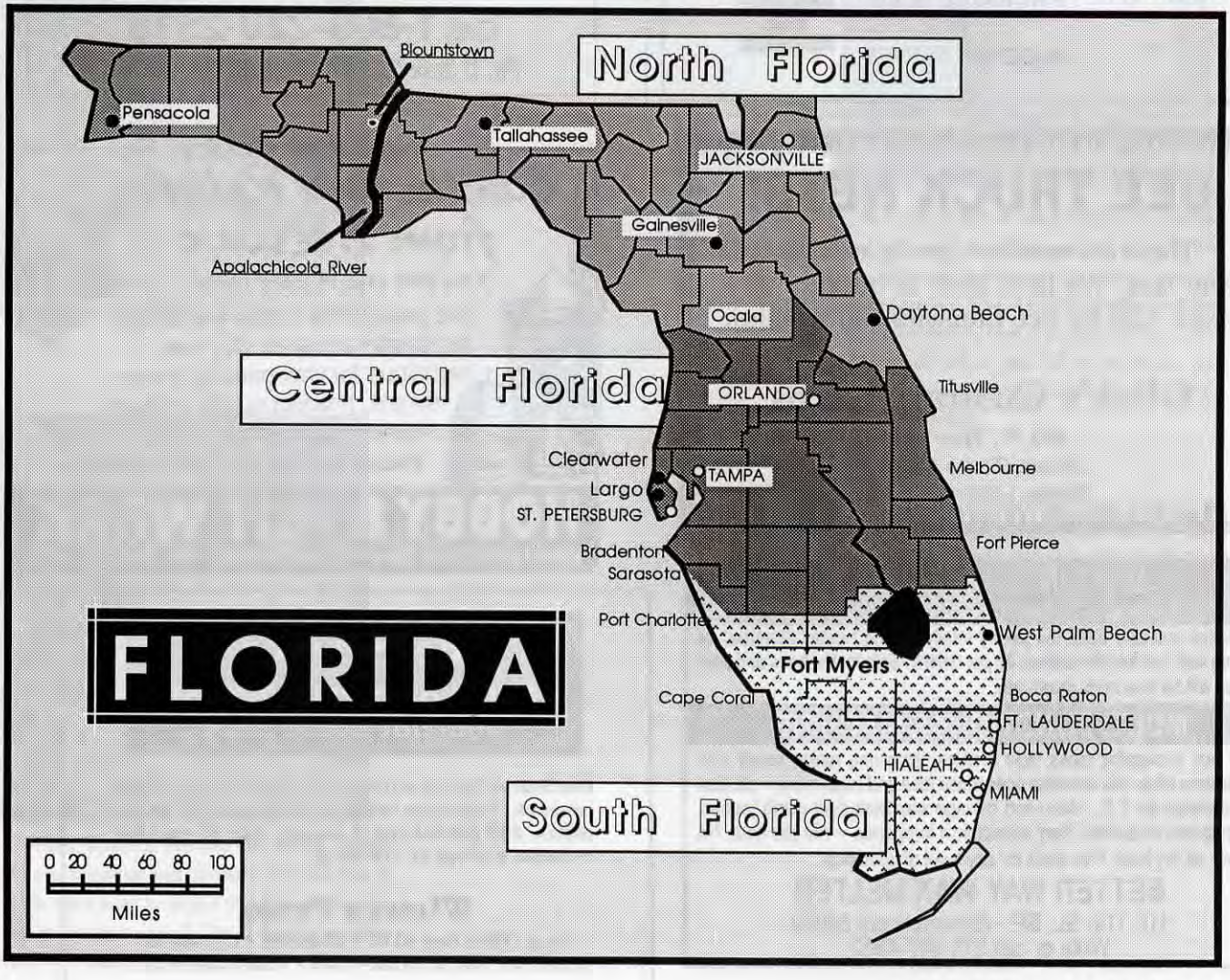
A HOSTILE PARADISE

ROGER A. MORSE

Florida is one of the leading agricultural states, but beekeeping has been declining for the last five years.

During the past 50 years, the population of Florida has grown from one to 13 million, and immigrants from the north are still pouring into the Sunshine State. However, in recent years the number of colonies has decreased from a high of about 360,000 to about 220,000 at present.

Several factors have contributed to this decline, the biggest being economics. During the past five years the wholesale price of honey in large containers has fallen from 65 to about 53 cents per pound. Varroa and tracheal mites have taken a heavy toll. In fact, no state has suffered more



from these two mites than Florida.

Also adversely affecting the beekeeping scene have been restrictive quarantines by other states, freezes, droughts, forest fires, vandals and bears. In spite of all this about 100,000 colonies are moved out of Florida in the spring of the year to at least 12 states for honey production and pollination.

Florida is one of the leading agricultural states in the nation, with more intensive farming undertaken daily. These changes have had a great effect on Florida's honey plants. Adverse weather, too, has also had an effect. This is especially true in central Florida where freezes have killed many citrus trees. In Southern Florida, huge drainage projects have opened up land for agriculture that was once too wet and swampy for growing crops. There are now roads, ranches and farms in an area that did not exist too many years ago.

Blueberries are now being grown in Florida as far south as Highlands County in the south central part of the state. This is an example of a new venture in Florida agriculture; no one thought of growing blueberries in the state a few years ago. Florida blueberries are the first on the U.S. market and have been commanding unheard of prices in northern states. One problem with growing blueberries in Florida is there are a number of other plants in flower at the same time, including citrus. When you have concurrent blossoming they compete very well with each other for bees, since they all are about equally attractive. This causes one to wonder if there will be sufficient bees attracted to blueberries for pollination.

Because of the great variation in the state's terrain, agriculture, and climate, it is best to divide it into three parts when discussing beekeeping and honey production: North and Northwest, Central, and South. Even within these three areas, there are great differences in the honey plants.

Northern Florida

The honey plants in the area north of Ocala, in the center of the state, in order of their importance are gallberry, saw palmetto, cabbage palm, spring titi, and tupelo, especially the white tupelo. The last two produce a surplus in the panhandle only.

Gallberry is by far the most important of these honey plants. Cabbage palm is the state tree of Florida and is found over much of the state. Nectar from cabbage palm is often thin but it is a great plant on which to rear brood in the summer.

One of the great changes that has taken place in West Florida involves the production of tupelo honey, most of which has been produced along the Apalachicola River. Tupelo honey contains more fructose than any honey in the country. Therefore it is very slow to granulate, and it is much sweeter than any other honey. As a result there is a special market for it.

Not too many years ago colonies were taken downstream on the Apalachicola River from Blountstown and placed on high platforms along the river's banks. Barges and platforms are too costly today and the tupelo honey-producing colonies are placed on the high banks some distance from the river.

Central Florida

Citrus has been the chief honey plant in Central Florida for many decades; however, in the past 100 years the areas where citrus is grown have been steadily pushed south in the

Gallberry – a relative of Holly, is a very important honey plant.

state. The first, big major citrus producing area in Florida was between Gainesville and Orlando. Much of that citrus was destroyed by freezes that occurred in the 1890s. In the years that followed the production of citrus ranged from a little north of Orlando to Highlands county in the south central portion of the state. Freezes in the 1980s have pushed that area south and now thousands of acres of citrus are being planted in what was once everglades.

Beekeepers feel the citrus honey flow in these low areas is seldom as good as it is on the higher ridge though there is no good explanation for this. There are still some oranges grown as far north as Orlando but the acreage is much smaller than it once was.

When citrus flowers beekeepers say one cannot over populate an orange grove with bees. While this is probably an overstatement, nevertheless, everywhere citrus is grown on earth it is known as a great honey plant.

However, in Florida, the citrus groves are almost deserts for bees when *not* in bloom. You might keep a few colonies in or near a grove all year, but most of the colonies are moved elsewhere when the citrus flow ends. The chief problem in the citrus area is to find a sufficient number of nectar and pollen plants in December, January and February to grow the bees that are needed for citrus honey production in March. In these late winter and early spring months, beekeepers move their colonies near swamps where willow and maple are the major nectar and pollen plants, or even into cities.

Saw palmetto is an important honey plant throughout much of Florida, but it is in the central part of the state that it is especially important for beekeepers. It grows wild over

Continued on Next Page

A common apiary site in central Florida near Orlando. Flat, sandy topography with mostly scrub pine dominates the landscape.

FLORIDA ... Cont. From Pg. 97

much of the landscape. However, as pastures are improved, the saw palmetto is removed and in the long run this will have an adverse effect on beekeepers.

South Florida

Citrus is becoming more important each year in South Florida. However, at the present time the two most important plants in South Florida are melaleuca (a Eucalyptus cousin) and Brazilian pepper. Both of these plants yield in the fall months, September through December. They are used to grow bees as well as to produce honey. Both of these plants are much disliked by many groups of people. Melaleuca sheds air-borne pollen that is irritating to many people and at least nine counties in South Florida have made it illegal to plant it. Some people have talked about eradicating the plant that was introduced into the area from Australia. Melaleuca is so well established that it probably is not possible to do so. In some areas where there are large numbers of people there may be less melaleuca in the future.

Brazilian pepper is an introduced holly-type plant (*Ilex sp.*) with male and female plants. The female plants bear bright red berries that have sometimes been used for Christmas decorations. Brazilian pepper likes wet areas and grows in profusion in south Florida on land that is a little less wet than where mangrove flourishes. It grows rapidly in disturbed soil along canal banks. It has been described as "a most tenacious pest" because it is a rapid colonizer of wetlands and disturbed habitats. Attempts to eradicate the plant by cutting, or with weed killers, have been totally unsuccessful. Brazilian pepper is distantly related to poison ivy and in some people it produces allergenic reactions when they come into contact with it. The berries may have a narcotic effect on some birds. These toxic qualities are not found in the honey and to beekeepers in south Florida it is a great honey plant, especially because of the time it blooms.

Mangrove is a native that is an excellent source of nectar though it does not yield every year. It grows along the southern coast of Florida in wet and swampy areas. At one time there was much more mangrove in South Florida but new settlements along the coast have destroyed much of it. The honey is almost always thin and ferments easily. There are three types of mangrove and it is reported the black mangrove yields the greatest quantity of nectar.

A large portion of South Florida is occupied by the Everglades National Park. Melaleuca, Brazilian pepper and mangrove all grow in great profusion in the park but there are almost no roads into the area. The only honey that is harvested is from the edges of the park. A great quantity of honey is never harvested because the area is inaccessible. A few beekeepers have tried placing bees on barges that are anchored along the southern, coastal part of the park in the Gulf of Mexico. These efforts have always been abandoned as they are too costly.

Goldenrod is found throughout Florida, but in South Florida it is an excellent source of honey in the fall. Much of the goldenrod honey, along with that from Spanish needle, melaleuca, Brazilian pepper and other summer and fall plants, is often left on the hives and used to grow bees for the orange honey crop. It is very important that beekeepers in the Central and Southern parts of the State harvest this honey that is still on colonies just before the orange flow starts. This fall honey is usually dark in color and strong in flavor and will contaminate the orange

Saw Palmetto earns its name by the serrated edges of the stems (or petioles) of the leaves.

Colonies on elevated stands and honey removed by barges is still a common site in some parts of the state, but were very common earlier in the century.

honey. There are many varieties of goldenrod but the flat-topped type is best for nectar production.

Yankees

When I moved to Florida, where I lived for two years in the mid-1950's, I was interested to learn how beekeepers sought to move their colonies into cities in late December and January to build bee populations for the orange honey crop.

The early spring flowers planted by Northerners in Florida cities are a great benefit to those Florida beekeepers who can find apiary sites along the edge of or in the cities. There are hundreds of species of early flowering plants that are found in one back yard after another visited by bees, and are great early sources of pollen and nectar.

However, several Florida cities now prohibit this for several reasons (see Jan. *GBC, The Land*). One has been that a few beekeepers have placed colonies on city lots where the bees were a nusiance. Also, the adverse publicity that the Africanized honey bees have had has caused difficulties, too. Thus, in a few cities beekeepers have been prevented from taking advantage of this tremendous resource.

The Best Place

Jay Smith was a well-known beekeeper and queen producer prior to the Second World War. He wrote frequently for the bee journals and his book, *Queen Rearing Simplified*, published by the A. I. Root company in 1923 is a masterpiece in beekeeping literature. My father, who was a hobby beekeeper, and I met Jay Smith in 1940 at his home in Fort Myers near the banks of the Caloosahatchee River that flows from Lake Okeechobee to Fort Myers. He told us that Fort Myers was *the best* place he knew to grow queens early in the season in the U.S. His advice was good then and I think it is good today.

More

Several well-known northern beekeepers have migrated to Florida, some with their bees and some without. Those who are interested in the history of beekeeping will find several interesting articles in the older bee journals. E. G. Baldwin, of DeLand, Florida wrote a detailed description of beekeeping in Florida that ran for 13 issues in 1911 in *Bee Culture*. These articles included notes about the important honey plants, beekeepers, moving bees on boats and barges, and management techniques. A. I. Root himself spent several winters in Florida and wrote about his activities there, too.

I have discussed only the major plants that produce the honey that reaches the market. Each time I visit Florida I find new native and exotic plants attractive to bees. While the major honey flows in Florida last only a few weeks, colonies rear brood over a greater period of time than in the rest of the country. This makes these minor honey plants especially important.

As with the rest of the country, changes in agriculture and population growth are affecting the beekeeping industry more than any other single factor. However, this is more true in Florida than in many states. A few years ago Florida was the home of over 40 queen and package bee producers. Tracheal and varroa mite quarantines, together with economic considerations have eliminated all but a handful of these beekeepers. □

Sources

Professor Malcolm T. Sanford, Extension Apiculturist with the University of Florida at Gainesville has written a great number papers of value to those interested in learning more about beekeeping in Florida. Especially helpful are his one to five page papers entitled *Hints for the Hive*. These cover a variety of topics including educational materials, honey plants, colony management, diseases, etc. These and other papers are available by writing Dr. Sanford at the Entomology and Nematology Department, Bldg. 970, Hull Road, 740 IFAS, Gainesville, FL 32611.

Laurence Cutts, Chief Apiary Inspector with the Florida Department of Agriculture and Consumer services offered his comments and help with this paper, too. His final comment to me was that "Florida", his home state, "is a very hostile beekeeping paradise."

IN MY OPINION!

O.B. WISER

I had just come in from the final check prior to harvest and Glory Be! a honey flow was on from unknown honey plant. The honey was yellow and mild, but what was it? This year the bees did not store one pound of dandelion honey in the spring and this summer not a single ounce of alfalfa honey filled the combs. They were making the most common type of honey known – FENCE POST HONEY. It's a good thing there's a lot of fence posts out there – us beekeepers would all starve to death without them.

Well, today, while I had to move some supers a local beekeeper loaned me when my two-queen systems got ahead of me, I was reminded of how miserable it can be to work with improper bee equipment. I had forgotten how horrible it feels to pick up a super with only those cut-in finger holds manufacturers waste their time putting on all four sides of a nice new super.

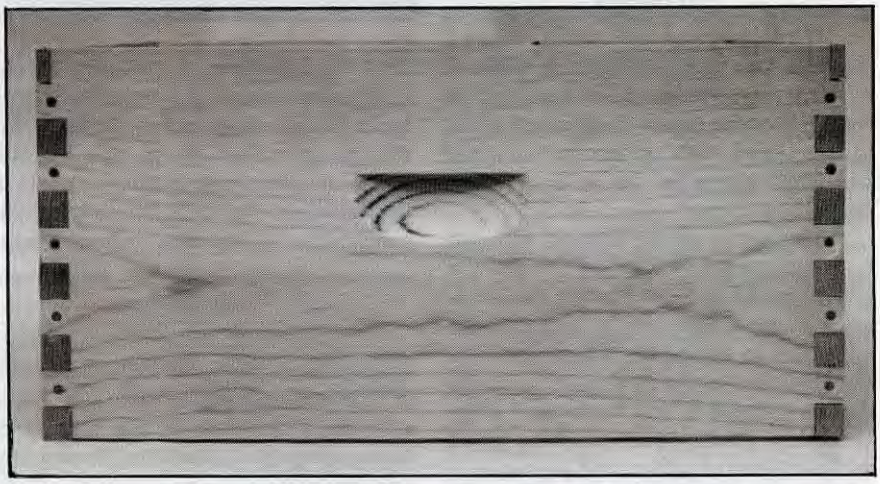
Who was it that came up with that method to torture fingers and help beekeepers retire early, with hands turned into claws from arthritis after years of lifting 90 lb. supers with only the finger tips.

Why manufactures waste time and money cutting those worthless handholds into supers is beyond me. On the sides, yes, but the only thing that belongs in front and back is a hand hold; not a cliff hanger finger hold only a desperate mountain climber would use as a last resort. The pain and damage done to beekeeper's hands should be outlawed – right along with the Short Mexican hoe.

Back in my naive youth, I, too, thought the use of real hand holds was not required. I reasoned, look at all the space lost between supers and look how nice and neat the supers stack, side by side. And besides, surely those guys who make the equipment know what they are doing? But they don't!

The solution is real simple. It is a piece of 3/4" thick pine, 16-1/4" long by 1-3/4" wide. It is attached about 1-1/2" from the top lip of the front and back of the super. Now *that* is a hand hold that allows you to use your hands and arms to pick up a super. Not a finger hold that jams all the bones in your two hands together with huge amounts of pressure, while your poor back muscles try to compensate for the rotten grip you have. You ruin your hands and break your back at the same time.

Then there's the queen excluder – the only useful thing I have found to use these for was when I made a capping catcher out of a super and put a metal funnel under the super. I nailed an excluder on the bottom of the super to catch the cappings and drain the honey. In my new Cowen conveyer system, the queen excluder can also be used as a false bottom on the conveyer to catch and drain the cappings as you scrape the top bars and scratch the combs. So you see, $15 worth of excluders are good for something, but they do not belong inside a beehive.



These type of hand holds make beekeepers old – fast!

In my opinion, queen excluders are more correctly called honey excluders. Awhile back, when I asked Mr. Spikes, my good beekeeper friend and past commercial man from Southern California about them, he just said, "you have milked a cow now, haven't you"

"Yes"

"Well, fill a stainless bucket to the brim and tell me what would happen if you had to get through a fence made of three strands of barbed wire? What would happen?"

"Well, any fool that would try such a trick would loose half their milk, if not all of it" I reasoned.

"Well a bee has about the same problem getting through a queen excluder," he said.

Well, that was that until I got to graduate school and I asked Dr. Norm Gary the same question. He whipped out all this research that said it does not make any difference. So with my new light and knowledge, I returned to my bees and tried my own experiment. I put excluders on half a yard and half without.

The bees that had them had a cap put on their brood rearing and they were not as strong, and you could see the bees gather their forces at the fence not wanting to cross the wire until the shear force of incoming honey forced them to – but not before they had effectively plugged out the lower boxes with honey.

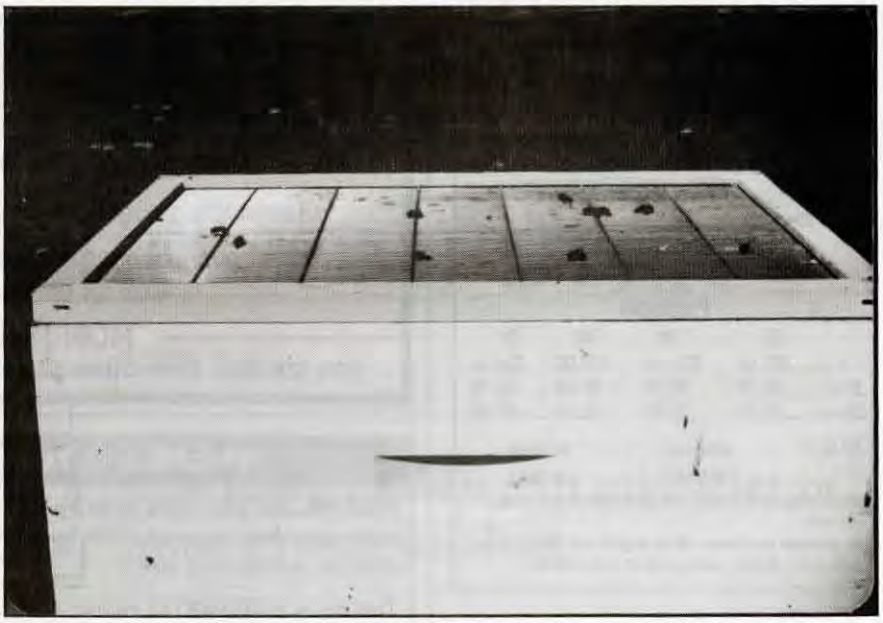
Yes, without excluders, sometimes brood goes into the third boxes, so what?

Let the honey push it out. That is the idea, you know. First thing I noticed was queen excluders excluded young bee production and reduced the numbers in really strong hives.

Then there is the burr comb that welds the excluder to the top of the brood chamber, so when you pry it loose you bend the stupid thing and the queen can get through anyway.

But, more often than not, the queen excluder soon becomes a beekeeper excluder too – when the beekeeper quits looking beneath the bee fence for fear he will wreck the expensive piece of equipment. A more perfect beekeeper barrier is hard to imagine. It is welded tight with wax and adhesive propolis and you soon know that if you try to pry the third box off you have a 50% chance of twisting and wrecking it.

And then there are Boardman entrance feeders. It is inevitable that when I buy someone out they have these like-new Boardman feeders. They are always like new because they are so seldom used after they are bought.



Are queen excluders honey excluders?

The Boardman feeder – the only bees that can use them, don't need them.

These pieces of junk have been around all of my 34 years and yes, I, too, made the mistake of buying a number of them, and I've inherited a lot more. It is always hard to throw them away. I even started a collection of all the different types I got. I collected some that were over 100 years old, some that were solid wood, some that took different types of jars. The variety was wonderful, so I stacked them up in hopes the antique value would make it worthwhile. But only another beekeeper would ever know what they were.

Let's not beat around the bush. In order for a colony's bees to be able to come down to the bottom of the hive, crawl out into a little chamber and pick up the sweets, several factors must be met.

First, the hive must be strong enough to be able to get the force out the front door. It takes a real strong hive to make it out into entrance feeders. Second, the temperature must be warm enough to make it possible for the bees to go to the feeder. Cool, rainy days in the spring are very contrary to using entrance feeders.

In short, the conditions needed to use these feeders – real strong bees and warm days – are the conditions conducive for bees to collect their own food. So the only bees that can use a boardman feeder are bees that don't need one!

There's more I want to talk about. More equipment that I just can't figure out – like smokers without shields, certain kinds of frames, frame spacers. But we'll wait 'til later. Patience pays in beekeeping in all sorts of ways – and I learned *that* the hard way! □

SIMPLE TRICKS

WITH YOUR COMPUTER

STEVE BURT

A home computer and a little imagination can add a lot of class to your home-grown product.

At first thought, it would appear that an outdoor activity like beekeeping would have little or no connection with an indoor activity like using a computer. This is absolutely not the case, however. Computers can help beekeepers in some remarkable ways.

The language of computing is almost a foreign tongue to those of us who grew up speaking English, but you can learn to use a computer with a little daily practice. I am proof!

I want to discuss some of the ways a computer can assist any beekeeper in colony management and honey promotion, using programs that are easy to use, even for a computer wimp like me.

Database computing is a fancy term for using the computer to collect data (information) in files which can be sorted in various ways. You could use a simple database to compare colonies for breeder selection. The data to be selected could be honey production, gentleness, calmness, freedom from disease, freedom from burr comb, minimal propolizing, etc. The choices are entirely yours.

Some factors could be selected for quantity characteristics. Honey production is an obvious variable between colonies that can be compared. Other factors, such as disease resistance could be sorted on a yes/no basis. Gentleness could be scored one to 10, with one the mildest, and 10 the worst. No breeder would be selected if it scored greater than three, perhaps. Again, all the choices are yours. Once the computer has your particular set of instructions, it will faithfully select and sort any and all colonies that meet your specifications.

An alternative use for a simple database program is to enter your customer mailing list. After sorting such a list, most databases can print mailing labels or lists sorted alphabetically or by zip code. Another use would be for inventory control, and could show, at a glance, all the equipment you own and even where it is, right now.

My database work is done with a program called *PFS First Choice*™, an integrated (does almost anything) package of programs that came free with my Epson Apex computer.

Simple desktop publishing programs allow you to make sales fliers and promotional signs. You can scale letters from very small to several inches high, and produce printing in a

Example of a possible database for queen selection.
Data input for a typical colony.

```
                Colony Analysis
Colony # 17

1. Honey production in pounds this year: 125
2. Honey production in pounds last year:  75
3              Current year queen (Y/N):   Y
4                Current year AFB (Y/N):   N
5                 Prior year AFB (Y/N):   Y
6                     Chalkbrood (Y/N):   N
7            Obvious Varroa mites (Y/N):   N
8                  Excess propolis (Y/N):   Y
9                Excess burr comb (Y/N):   N
10.            Colony gentleness (1-10):   2
11                 Swarming urge (Y/N):   N
12               Pure yellow color (Y/N):   Y
```

Continued on Next Page

COMPUTERS ... Cont. From Pg. 103

variety of fonts (type styles) that approaches hand-set type. The possibilities are endless and the cost is pennies per flyer or sign. And, you can save your best designs for future use or editing. I use PFS *First Publisher*™, a fairly simple program that costs about $100.00.

A custom label printing program can be used to produce attractive and functional honey labels. These programs often contain clip art or you can draw your own and import it for custom results. The labels in the example were done with *Avery Label Pro*™, a powerhouse of a program which prints all of Avery's tractor feed label products. Cost? About $50.00. The bee was drawn on *Print and Paint*™, a graphics program, and brought over, or imported, to the label program. These can be printed on a dot matrix printer at a cost of $8.00 for 500, plus an occasional printer ribbon. How fast? About two per minute!

Pure Honey!

Packed by Steve Burt
Reg. Beekeeper #7829
19316 Brandt
Roseville, MI 48066

1 Pint (1LB, 4 OZ)

Your first efforts to design what you want may take quite awhile, but the computer saves the label design to reuse or to make minor changes.

Word processing is another power of the computer that can truly be helpful. This article was written with *PFS Pro Write*™, an easy-to-use word processing program. It finds and corrects my spelling errors, and corrections or changes can be rapidly done while still on screen, not later with an eraser, or worse by retyping the whole thing.

Buying a computer should not be a frightening experience. A functional computer, monitor and printer should be available for around $1000.00 if you shop carefully. Appliance stores are very competitive.

My computer is an 8088 XT IBM™ clone. In the year and a half since I bought it, this electronic marvel has become completely obsolete and far more powerful models are now available for the same price as mine was. Obsolete or not, my electronic box steadily does everything I want, never calls in sick or makes health care claims, and hasn't asked for a raise even once. *That* is what makes computers really scary! □

LETTERHEADS

R.T. EDWARDS

No doubt about it, the letterhead on your stationary, as well as the appearance of your correspondence has a definite affect on the perception of your business by your customers. Indeed, the way you come across on paper is just as important as the way you present yourself in person. In both cases, a first impression can be a lasting one. An impression you might not be able to shake off for the rest of the time you are in business.

Your customers want credibility and dependability. They sense this in you when you first meet them. They sense it when you communicate through the mail.

However, before focusing on all of that, let's cover some paperwork. Let's focus on a single aspect of communication – your letterhead.

Attracting Attention

Any cub reporter knows you have to provide the reader with facts. Generally speaking, these standard WHO, WHAT, WHERE and WHY questions go into the first paragraph of a news article. The customer is going to devote just about as much time to reading your letter as he or she would an article in the newspaper.

The psychology behind providing a quality letterhead is remarkably similar to that of the hard news article. Only here, you want to address the WHO, WHAT and WHERE. Let's begin with the WHO.

Who you are – either in form of a company or personal name – is what first captures the attention of your reader. It is imperative that the size of the print and the style of the type match your personality and your business' ideals. In other words, you need to make your name stand out and be exciting.

You also need to consider natural appeal. *Where* you place your name is as important as the size and style of the letters. Color adds dimension. The letters can be raised or they can be embossed. Lines which are thin at first and then thicker below suggest a solid foundation. *Using italics, like this sentence, reveals a positive outlook and the desire to be part of the action.*

Now, look at the second line in the letterhead. Here, you tell readers where you are located. The smoother the flow for the customers' eyes the better. This means that your street address, city, state and zip code should be on that line.

The third line should provide a complete telephone number – including area code – and, if you have one, your FAX number.

What You Are – What You Do

How many customers would know what you do based on a simple letterhead, with only your name and address? Only those who know you, that's who! Indeed, there must be something above or below which connects your name with the business you are in.

When this is combined with a slogan, a logo or other short facts, your business letter not only captures the attention of customers but it educates and informs them at the same time.

A creative, attractive letterhead, that can be designed with your personal computer and a little imagination, will improve your image, and the chances of increasing your business. The more creative you are, the more money you are willing to spend on your letterheads and envelopes, the greater your chances are they will be read, and acted upon.

TEASEL

B.A. STRINGER

The teasel was acclaimed as "one of the greatest honey-producing plants in existence" and, furthermore, "its honey-yielding qualities are equal to basswood", in the 1878 *American Bee Journal*.

The teasel has been used from ancient times to raise a nap on woolen cloth. This work was once done laboriously by hand, but later in the 1800's the teasel heads were arranged on cylinders and mechanically rotated over the cloth, catching the fibers with small curved hooks and causing them to stand up from the cloth forming a nap. In fine fabrics, the nap was sheared to bring it to a uniform length.

In the *Gleanings In Bee Culture* of January 1878, Dr. G.M. Doolittle wrote about the history and culture of teasel. He said the plants were generally biennial although smaller plants, known as "Voors", might not bloom until their third year. Seeds were planted in rows like corn, and farmers often raised beans or turnips with them in the first year. The plants were susceptible to winter kill if the crowns froze while wet. In May of the second year, after being cultivated or lightly hoed, the plants were "left to run"

The "kings", or topmost flower heads, bloomed from July 10 for seven to 10 days, "opening first in the center of the head, blossoming toward the tip and base, and ending off at the base." If the "king" bloom is removed, the other teasels will be larger, but the seed will not germinate. The heads were harvested as soon as the blossoms fell. Dr. Doolittle described the progression of bloom this way: "The "middlings" begin blooming when the kings are about half through, and the "buttons" come last, making from 20 to 25 days of bloom from the commencing of the kings to the ending of the buttons."

The kings, middlings and buttons were all mixed and sold together, by the thousand, for about 75¢/1000 in 1877, which was down from $2.00-5.00 "years ago", according to Doolittle. About 10 pounds of heads made 1000, and an acre yielded between 100-250 thousand heads. In the 1890's the price was 90¢ to $1.00/1000, and it was reckoned that any price under 75¢ would not return a fair margin of profit. This was lucrative pasture in the late 1800's.

Teasel bloomed about the same time as basswood, and several beemen of the time lamented the overlap of bloom. The teasel, however, appeared to be very attractive in the face of competition, as "bees worked on them all hours of the day you will find them at work on teasel at all times, regardless of how well the basswood yields" For unknown reasons, teasel failed in 1876 to produce nectar. This was an isolated event chronicled by Doolittle, who said, "I have never known teasel to fail to secrete honey except in 1876."

In the *American Bee Journal* of July 1886, Dr. G.M. Doolittle stated he had "secured $1000 a year from 100 colonies, largely from teasel" cultivated in the area around Borodino, New York.

Liberty Hyde Bailey recorded in the *Cyclopedia of Farm Crops* (1907), there were two varieties of teasel in America, "the *Dipsacus fullonum* or Fuller's teasel, which is the only kind having commercial value, and the wild teasel, *D. sylvestris*, which is a common wayside weed in many sections, and is said to have some value as a bee plant."

Where the branches attach to the main stem of the teasel, or teazel, the leaves grow together, forming a cup which may hold as much as a pint of water. Mr. Bailey commented that without water in these cups, perfect teasels will not be formed. The plant's botanical name reflects this oddity, being derived from the Greek *dipsakos*, meaning thirst. The common name of teasel is derived from old Anglosaxon *taesan*, "to tease", referring to the separation of fibers by combing or carding, as with wool or flax.

Even as late as 1941, Mr. G.H. Vansell wrote, in *Honey Plants of California*, teasel "yields a tremendous amount of nectar, as many as three or four bees may work a single flowering head almost continuously through the day." The honey was said to be very thin, requiring a lot of dehydration to bring it to the consistency of basswood honey, although the nectar sugar concentration is 26%. Apparently, a small acreage of teasel was still cultivated in California in 1941, for industrial combing of fibers. At that time, observers also reported dead bees on the flowers, the cause of death unknown.

Teasel grows wild over a large area of the U.S. and Canada and is sought for use in dried flower arrangements, where dried heads are often spray painted silver or gold. Other common names for the plant include Card thistle and Clothier's brush. Beekeepers whose bees have access to teasel's long bloom, have a valuable supply of nectar at a critical time of year. □

INNER ... Cont. From Pg. 68

That makes seven compounds honey bees can be legally exposed to, and if improperly used can show up in honey (Miticur, Apistan, Terramycin, Fumidil-B, and menthol, plus the fumigation chemicals).

At the risk of being repetitious, please – read the label and follow the instructions to the letter. And don't use a chemical unless you need a chemical, and only then use it wisely, properly, with caution and care.

You won't get a second chance and the EPA and FDA play for keeps if it's your honey they have a problem with.

●

A year ago we presented a series of articles in this section on how to save money without reducing the quality of your product. We (the editorial 'we') supposed the unhealthy financial situation at the time would be shortlived, but money-saving ideas were in order nevertheless. However, the situation we supposed would be over by now, isn't.

Reports from all over indicate money is tight, jobs are scarce, credit is hard to find, banks are in trouble, real estate prices are declining and the end of the world as we know it is near. Well, maybe it's not quite that bad, at least yet.

But in a round-about way this brings me to a subject near and dear to my heart – finding new beekeepers.

I am a member of the most famous group of people ever born – the "Baby Boomers". Those of us born shortly after WWII – now aged 40 - 50, are the perfect group to consider when looking for new beekeepers.

As reported here before, the majority of people who begin beekeeping have several attributes in common – financial stability, available time, maturity, ability, and strength.

So, as the "Boomer" generation gains these attributes, and their children begin to leave the nest, there should be literally millions of "Boomers" out there just waiting to become beekeepers.

And the timing couldn't be better. With the current recession solidly in place, (and intending to stay where it is, apparently), many people are looking for a pastime that allows some exercise, sightseeing, communing with nature and, yes, the chance to make some money. What better activity than keeping bees?

The next few years should see a flush of people able and willing to become beekeepers, and an ongoing financial situation that lends itself to an "anywhere you can get it" mentality.

The weak link, if there is one, is that these people must be 1) exposed to the positive side of beekeeping; 2) become convinced that keeping bees is not only enjoyable but profitable; and 3) get the reinforcement needed to keep at it. Reinforcement here means not only finding a group or other opportunity to learn how to keep bees properly, but, once accomplished, actually be able to make some money at it. African honey bees, mites, restrictive rules and regulations, and a profitable price for honey all must be taken into consideration, dealt with and if necessary, overcome.

Looking for new members? Consider a "Boomer". Find one who already has a house, a pretty-much grown family, some time on his hands and a little bit of debt. Scratch that person, and underneath you'll find a ready-to-be beekeeper.

●

Finally, this month's issue has the long-awaited article on beekeeping woodenware. Our Weekender has done an exceptional job of comparing and contrasting the various models available. You'll find out a lot about how much the 'standard' sizes really aren't all that standard.

Some prepublish reviewers have expressed concern about a couple of things, though, that I thought should be mentioned.

First, these comparisons were made on only a single sample of each manufacturer's model. Hardly a scientific study, and freely admitted, both here and in the article. One super, one set of frames, one inner cover and cover are not representative of the entire line of any manufacturer. True, unless you happen to buy only one super, with frames that is. Then that's the only way you have to measure the folks you bought it from. If your new super and your old supers don't quite fit, now maybe you'll know why. Now, maybe, you'll know why some supers always have more propolis, or more burr comb than others. Maybe.

The second thing is that even if these samples are representative of a manufacturer, they may not be next season, when they retool or buy new equipment, or make a few adjustments. They may change that 1/32ed of an inch to fit exactly, or reduce that 3/4 inch space down to the correct 3/8 inch. Or they may not. We hope they do, though. And we hope you find the article interesting.

Kim Flottum

BEE TALK

RICHARD TAYLOR

Box 352, Interlaken, NY 14847

"Comb honey production is easy, but first – the basics."

I have noticed a growing interest in comb honey production over the past few years and, along with this, increased consumer interest, too. This has been heartening, because I think of comb honey production as the perfection of the beekeeping craft. Surely no food is more beautiful or more delectable, and no other sweet, even extracted honey, so totally measures up to the standard of being natural and unprocessed. At the turn of the century everyone knew what comb honey was, and many beekeepers made their livelihood producing it. Then its use began to decline until, by the time of the second world war, it became something of a curiosity.

Now it is clearly on its way back, and there is no doubt that the primary reason for this has been the development of circular sections. These have enormously simplified and reduced the labor of comb honey production, as well as resulting in a package that is attractive and easy to ship. I have mailed many packages of comb honey over the years, and have yet to receive the first report of damage. Recently a beekeeper wrote to me that he had mailed comb honey to a soldier fighting in the Persian Gulf, and that it had arrived at that distant place, under the conditions of war, undamaged. Besides this, the circular sections are filled faster and better than the square wooden ones. It has been no small surprise to me that bees seem to have no aversion at all to plastic.

The comeback is far from complete. I would guess that as many as half of the people who purchase honey at my honey stand do not know what comb honey is. Still, they buy it, even those for whom it is a novelty. So more and more people are learning about it each year.

So I thought I would devote perhaps two or three of these bee talks to producing comb honey. Many of the books on the subject including one of my own, make it sound excessively difficult. There are indeed some complex and labor-intensive systems of management for producing comb honey, but it is not necessary to get caught up in any of these. Comb honey production, if your honey flows are right, can be exceedingly simple – simpler, in many ways, than going for strained honey.

You need vastly less equipment, for one thing. The main problem is that it is easier to make mistakes doing comb honey, and when you do make them, they are harder to cover up. What you have to do, then, is learn how to avoid those mistakes. I daresay that is the single most important thing about getting comb honey – the simple avoidance of mistakes.

A couple of years ago I was invited to address a large meeting of beekeepers on the subject of raising comb honey. One of the other speakers was filled with consternation upon learning this, for he, too, planned to address himself to the same subject and, he said, he planned to set forth the very methods he had gotten from my book on comb honey. He was sure we would end up giving essentially the same talk. We didn't at all, because instead of describing all the nifty and complex methods of management, I set forth just one simple, straightforward system, which anyone taking notes that day could boil down to just a few basic principles. And that is what I am going to do here.

You can get caught up in these complex methods, the"shook swarm" system being one of the best. I've used that system many times, with good results. But I don't anymore. It requires too much time and trouble. What you want, I think, is a simple system that you apply pretty much the same way to every hive and every apiary. That way you approach the bee yard with a fairly clear idea of just what you are going to do there and, pretty soon, you are on your way to another bee yard to do about the same thing. Anyone who is as busy as I am, and has as many things on his mind, does not have the time or energy to spend half the day "fooling around in the bee yard", as Walter Kelley used to put it.

The possible exception to this is the beekeeper who *has* plenty of time to fool around with his bees and who has only a few or perhaps a dozen hives right in his yard. He may, as a challenge, want to see just how much comb honey he can get from one small apiary. More power to him. But he will find, I think, that those impressive crops are achieved at a very considerable cost in time and, often, frustration.

Let us begin, then, with a few basics.

The first is, that unless you are in an area of intense nectar flows – at least one, and preferably several – then stay away from comb honey. You can extract honey from combs that are not properly filled, or that have been on the hives several weeks and have become travel stained, but you cannot get decent comb honey

there. Most of the south, for example, is unsuitable for comb honey getting, with the exception of limited areas where there are heavy flows from some particular plant that happens to thrive there. Most areas of the mid-west, on the other hand, are very suitable for comb honey, especially those where dairy farming thrives.

Second, avoid travel stain. This means checking the hives frequently – at least each week – and getting supers off as soon as they are filled, or nearly filled. Having travel stained sections is probably the most common fault of comb honey beekeepers. It is one I have been guilty of more than once. And it is probably the easiest mistake of any to avoid.

Third, get well-filled sections; which means, sections that are filled right up close to the edges of the circular sections. This is easy enough to do in a good heavy honey flow. The problem of improperly filled sections arises when a flow abruptly ends and the bees then cap the honey over. Such sections should never find their way to market, even though there is nothing else wrong with them.

And finally, use a deep freezer, to forestall wax worm damage. I have heard that there are areas where wax worms are not a problem for comb honey, but that is certainly not true anyplace where I have kept bees. The tiny wax worms chew holes in the cappings, rendering the sections worthless. A couple days in a deep freezer, which will take the temperature down to near zero, is totally effective in preventing this.

Those are the basics. Next time I shall describe a simple, straightforward system of management that has worked wonderfully for me. □

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

BEEKEEPERS MEETING

QUESTIONS? ANSWERS!

What to grow?

Q. Is it feasible to grow any kind of bee forage plant that will increase my honey crops and can later be used as livestock food or as a saleable crop? If so, what would you recommend?

Robert MacFarland Lacy
Shade Gap, PA

A. In general, it does not pay to plant just for bee forage, but if the crop can be sold or used it might be worthwhile. As for what to plant, this depends on your soil. Some good honey plants, such as sweet clover, have very special soil requirements. You might consider canola, also buckwheat, although this latter, like many honey plants, sometimes yields little nectar even when it blooms well. The first thing would be to see what has been successfully grown in your area.

Cold Flight

Q. Why would bees come bubbling out of the hive in winter when it is 50°F: Mine did, and just died in the snow.

James E. Constance
Mansfield, OH

A. It is normal for bees to fly when the temperature reaches 45°F or higher. They do not hibernate, but remain active all winter, and are the only insects in this temperate region that do. It is also normal for large numbers to perish in the snow, these being, normally, the older bees. If the colony has tracheal mites, however, then most or nearly all the bees might thus perish, to the extent that none are left in the spring. There's nothing to be done about that now. Wait until spring and see whether the colony survived.

Start Right

Q. I lost several colonies to tracheal mites this winter, so the hives still have thirty or forty pounds of honey in them. I'm going to revive them with packages. Should I feed these package colonies sugar syrup, or can I just depend on the stored honey?

James Neagle, Jr.
Richmond, VA

A. There is no point in feeding sugar syrup when the hive already has honey. You might scratch a few of the cappings to expose a bit of the honey, to get the bees started, though this isn't really necessary either.

Mite, Mite Not

Q. My colony died of tracheal mites last winter so I replaced it with a package of bees in the spring. The inspector said these had tracheal mites too, so I treated them with menthol in November. This winter they came out on warm days and many bees appeared too weak to return to the hive. The front of the hive is covered with dead bees. Why are they so weak? Should I be giving them something?

Fannie Hostetler
Belleville, PA

A. It is not abnormal for dead bees to accumulate in the snow in front of a hive, sometimes in large numbers, but of course the presence of mites increases such winter loss. If your bees do have tracheal mites there is not much you can do about it now. If the colony survives until spring, then they will overcome the mites themselves, at least for this season. Perhaps you should consider having three or four colonies, so that any that perish from tracheal mites can be revived in the spring by taking brood and bees from the surviving colonies.

Making Splits

Q. I began a hive last spring with a package, but the bees are very cross. I have since learned that bees from a particular supplier have a reputation for being aggressive. Now I want to move the two-story hive away from the garden, divide it, and requeen both halves. What is the best way to proceed?

Melvin Johnson
Carmel, ME

A. First, get the hive moved to its new location as soon as convenient, before the bees resume regular flights in the spring. Then, sometime in May, when the bees have resumed regular flights, divide the colony by leaving the heaviest half (probably the top story) on the original stand, and putting the other story on a new hive stand nearby. Check in four days to see which half has eggs. It will probably be the one on the original stand. If not, find the queen and either put her in that hive, on the original stand, or destroy her and requeen. Requeen the moved half. This should be easy, as the young bees in the moved half will accept a queen readily. Requeening the part left on the original stand will be trickier, since all the old flying bees are with that half, but it will probably work okay. A better idea might be to put up with that old cross queen for another season, minimizing the risk of getting a queenless colony.

How dry?

Q. How do bees deal with dry sugar? Do they carry it out of the hive to a water source and then bring it back dissolved? The last time I gave a hungry hive dry sugar I saw them carrying little white particles from the hive.

Russell Peter
Kennewick, WA

A. Dry granulated sugar should, of course, not be fed to bees except in an emergency, to save a colony on the verge of starvation in the early spring. I believe the bees moisten the sugar in the hive to dissolve it. The particles you saw them removing were probably granules of sugar the bees did not want, or bits of granulated honey from which they had sucked the sweetness, or, possibly, bits of beeswax.

(Questions are welcomed. Address Dr. Richard Taylor, Box 352, Interlaken, NY 14847, enclosing stamped envelope for reply.)

Richard Taylor

GLEANINGS GLOBE

FEBRUARY, 1992 ALL THE NEWS THAT FITS

Honey Producers Can Qualify

DISASTER AID AVAILABLE

On January 2nd, Secretary of Agriculture Edward Madigan announced provisions of the Commodity Credit Corporation's 1990-91 crop disaster program.

The application period, which runs from Feb. 3 through March 13, will be administered by the USDA's Agricultural Stabilization and Conservation Service.

"President Bush has signed into law a measure providing $995 million for payments to producers who had crop losses due to natural disasters in 1990 or 1991," Madigan said. "We are preparing to implement this program."

Madigan said producers will select the year for filing and added that payments will be in cash and computed according to the 1990 Farm Bill. He said payments to qualifying farmers could be made beginning April 16.

Producers with qualifying gross revenues of less than $2 million per year may file claims for losses on participating and nonparticipating program crops: wheat, feed grains, ELS and upland cotton, rice, sugar beets and sugar cane, quota and additional peanuts, quota and nonquota tobacco, soybeans, minor oilseeds and nonprogram crops (which includes all commercially-grown crops not previously mentioned, including honey, maple sap and syrup, ornamentals, flowering shrubs, trees and turf).

"Producers with crop insurance must have had losses greater than 35%," Madigan said. "Producers without crop insurance must have had losses greater than 40%" Moreover, he added, "A producer may not file on one crop on a farm for one year and a different crop on the same farm for the other. However, the producer may request benefits for 1990 on one farm and for 1991 on another farm."

Madigan said producers would receive a more complete set of guidelines, along with a disaster program worksheet, from their county ASCS office before the filing date.

"The producer must accept the responsibility of preparing the worksheet, gathering supporting documents on the amount of loss and making an appointment with the county ASCS office to apply for program benefits," he said.

"Although the disaster loss application period is only from Feb. 3 through March 13," Madigan said, "if further documentation is needed, the producer will be advised and given the opportunity to submit the required documentation no later than March 27."

After all applications are filed they will go to ASCS' central computer facility, producer benefits will be summarized and the national allocation factor for limiting total payments to the $995 million will be computed.

SEND YOUR NEWS TO *THE GLOBE*

But Only In Michigan, So Far

MITICUR GETS SECTION 18 LABEL

The Environmental Protection Agency (EPA) granted Michigan an emergency registration for the treatment of tracheal mites with amitraz. The period of this registration is from 10-3-91 until 5-30-92. To date, the registration is for Michigan only. However, ID, MS, and MT have applied for approval, while IA, FL, GA, LA, MN, NE, and VA are investigating approval. The label does **NOT** require a pesticide applicator's license, so any beekeeper should be able to purchase the strips and apply them to their colonies. Miticur® strips should be available at $2.50/3-strip pack.

The treatment statement on the label calls for three strips to be put into the brood chamber of a colony for a period of six weeks. The bees pick up the chemical as they move across the strip when they are active. Amitraz has a relatively low vapor pressure and does not work as a gas. The great difference in size and weight of the mite as compared to a bee is one of the reasons the chemical is able to kill the mites and not harm the bees.

A basic restriction on the use of the amitraz strips is that they are only to be applied when there are no honey supers on the colony. There is one additional restriction in the case of this emergency registration; the exemption expires on May 30, 1992. It is possible that a U.S. general use registration will be in place at the end of May. In most cases beekeepers would be removing the strips at that time since they would be putting on the honey supers. There is a small tolerance (0.2 ppm) allowed in honey, though if the strips are used properly there should be zero found in the extracted honey. There is also a tolerance of 0.8 ppm of amitraz in beeswax.

Th cost of the Miticur® strips is a bit higher than most beekeepers would like. The good thing about amitraz is that it controls both the tracheal mite and the varroa mite, thus the total cost to control mites will be less.

MENTHOL AVAILABLE FOR ONE MORE YEAR

Scentry Inc. has voluntarily cancelled their registration of menthol before the due date, which means that although they can no longer manufacture products using the substance, they can continue to sell them for at least another year.

This time frame may extend even longer if the EPA is required to notify all current registrants of this action. This could extend sales an additional three months.

Dr. Ian Witheston, of Scentry, Inc. was fairly certain that, due to the voluntary cancellation (as opposed to a mandatory withdrawal)before the due date, the EPA would honor all continued sales to reduce existing stocks of the product.

Scentry is one of many manufacturers of pest related products containing menthol, but one of only two who produce a honey bee parasite control using menthol. The American Honey Producers is the other.

First Time in U.S.

BROTHER ADAM AWARDED

Recently the NC State Beekeepers Association conferred Honorary membership in the NCSBA to Brother Adam in appreciation for his many services to beekeepers throughout the world. Mr. Irvin Rackley, the NCSBA President sent a certificate making Brother Adam an Honorary member (Dated Nov. 14, 1991) and a cover letter explaining the award.

Recently we received a reply and a thank you letter from Brother Adam accepting the honorary membership, and we were very surprised by his statement that "Will you also allow me to point out: This is the first recognition I have received from your part of the World."

We don't know if Brother Adam was referring to the U.S., North America or what geographic designation, but it was a surprise that he hasn't received more recognitions of this type.

Enter Now

CONTEST!!

The "Mo-Kan" Host Committee of the American Beekeeping Federation is having a logo contest to promote the 50th Anniversary of the American Beekeeping Federation. The meeting will be held in January 1993 in Kansas City.

Rules –

1. The contest is open to anyone
2. The logo must feature a) the Location of the meeting (Kansas City), b) that this is the 50th Anniversary, and c) that it is an American Beekeeping Federation Meeting
3. More than one entry may be submitted
4. A professional artist may touch-up the design.
5. Entries must be received by April 30, 1992
6. Entries must be sent to: Sharon Gibbons, 561 S. Highway O, Rocheport, MO 65279, ph. (314) 446-0447
7. If two or more people submit the same winning logo the one with the earliest postmark will win.
8. Entries will be judged by the MO-KAN Host Committee
9. The winner will receive a check for $25.00 plus one each of the items that will feature the logo, i.e. T-shirt, Sweatshirt, cap, and mug

If you have any questions call Joli Winer during the day at 800-547-1392 (long distance) or 492-1670 (KC area).

TAX TIPS AFFECT BEEKEEPERS

Beekeepers who traded machinery or want to write off home office expenses have two new tax forms to deal with this year. Dick Duvick, farm management specialist at Ohio State University, says the new forms are to help the Internal Revenue Service verify allowable deductions. Form 8824, Like-Kind Exchanges, must be filed for each nontaxable exchange in 1991 – trading front-end loaders or exchanging timberland, for example. The form requires you to identify the properties involved, dates acquired and transferred, report original and adjusted basis and calculate the gain or loss deferred. Results of all Form 8824s are then reported on Form 47976 (Schedule D). Expenses for business use of a portion of a beekeeper's home may still be deducted from federal taxes. However, now you must document such deductions and any possible carryovers to a later year on the new Form 8829. Allowable expenses from Form 8829 are then reported on line 35 of Schedule F as "Business Use of Home (Form 8829 attached)."

Farm car and truck expenses get reported in a new section of the 1991 federal income taxes, too, says Duvick, who notes that Line 13 of the IRS's Schedule F now has a category for "Car and Truck Expenses." This category collects car and truck portions of deductible expenses from the categories labeled "Gasoline, fuel and oil"; "Insurance"; "Interest"; "Rent or lease"; "Repairs and maintenance"; "Supplies purchased" and "Taxes". Duvick says the IRS added the cars and trucks category because it found that some taxpayers were falsely claiming business expenses for car and truck use. Similar steps were taken last year for other businesses deducting vehicle expenses. Vehicle depreciation is still reported with all other depreciation on Form 4562, with the total then going on Line 17 of Schedule F. Detailed information on use of Listed Property (cars, trucks, computers, cellular telephones, etc.) is still required each year on page 2 of Form 4562. Duvick recommends that beekeepers, and those who report any income from their sideline business review their records for each expense category and identify the portion of the expenses for cars and trucks. Since this method of reporting is likely to continue, they should set up their 1992 records system to easily separate these expenses.

The Battle Begins

B.C.'S BEEKEEPERS HAVE HBTM

Beekeepers in British Columbia's fruit belt have been told they must begin immediately to fight tracheal mites that have begun infecting hives throughout the region.

It is the first time the mites have been found in colonies in the Okanagan Valley and they have been identified throughout the area.

"Beekeepers will have to learn how to deal with them," said John Gates, a B.C. Agriculture Ministry apiculture specialist. "They won't go away now."

He said using good colony management techniques is vital for local beekeepers if they want to successfully fight the spread of the mites.

Good management will help to control mites in hives so far uninfected, he said. "It won't solve all problems but will slow down this spread."

Okanagan beekeepers are being given details of the latest methods to fight mites in colonies already infected, including destroying and replacing hives, restricting bee flying, and taking precautions when transporting colonies from area to area.

Even in Beekeeping

INDUSTRIALIZATION INEVITABLE

Production agriculture is entering the final phase of industrialization that will integrate each step, including production, of the food system. These changes will lead to significant shifts in food policy, farm policy and rural development by the year 2005.

Thomas N. Urban, Chairman and President of Pioneer Hi-Bred International, Inc., says agricultural industrialization is inevitable, and explains its consequences in the current issue of Choices: The Magazine of Food, Farm, and Resource Issues.

"Health and cost reduction needs, matched to developments in biological and management technologies, are acting in tandem to drive the industrialization of the entire food system," Urban writes. Like other industries that restructured to accommodate consumer demands in the production and distribution system, agriculture will increase its efficiencies in the use of capital, labor and technology as a result of industrialization. Due to the agricultural depression of the 1980s, capital is seeking out investment in manufacturing enterprises rather than autonomous producers because of the decreased risk involved.

The industrialization process already is well under way in poultry, pork and cattle business, and will soon be spreading to grain and oilseed production areas. It is this area that will be the most significant to the industrialization process. Already, consumers are demanding "identity preserved" grain products that assure them of certain desired qualities such as kernel characteristics or the production of specialized starches.

Neither the family farmer nor beekeepers will be overtaken by "corporate" entities, but will have to rely on financial management skills and contract marketing to remain competitive. This is especially true because industrialization will likely lead to the erosion of support for current government support programs.

However, industrialization should stabilize agricultural income and provide competitive employment for rural workers, thus supporting rural development efforts.

Must Pay Assessment and Fine

HONEY PACKER DIDN'T PAY

The U.S. Department of Agriculture's Agricultural Marketing Service announced that Willie Baker, president of Bull Run Mountain Honey Company, Manassas, VA, began honoring an agreement to pay delinquent assessments to the National Honey Board.

Daniel D. Haley, AMS administrator, said Baker signed an agreement with USDA to pay $1,380 in assessments owed the honey board since February 1987, and $2,000 in civil penalties levied for having failed both to pay the assessments and to file with the board the sales reports on which the assessments are based.

Responding to an AMS complaint, USDA Administrative Law Judge Edward Bernstein in July had ordered Baker to comply with provisions of the Honey Research, Promotion, and Consumer Information Act of 1984, which required filing sales reports and paying assessments to the board administering the program in behalf of the honey industry.

Bernstein's decision also required Baker to comply with all provisions of the honey promotion law and of its implementing regulations, the Honey, Research, Promotion, and Consumer Information Order, to which Baker also agreed in October.

Haley said AMS, which monitors agricultural research and promotion programs, determined the amount of Baker's firm's delinquency in an audit completed in October. AMS compliance officials repeatedly notified Baker of his arrears, and the Honey Board, which administers the honey program, repeatedly attempted to collect them. Hence AMS resorted to judicial action, Haley said.

This case is another instance of USDA's interest in seeing that the laws it administers are applied equitably, said Haley.

National agricultural research and promotion programs created by individual pieces of legislation exist for honey, watermelons, cotton, dairy products, potatoes, beef, pork, eggs, soybeans, wool and mohair, and are in the process of being formed for mushrooms, pecans and limes.

SHORTS

A group of Texas businessmen has launched a satellite television network devoted entirely to American farmers and ranchers. The American Agricultural Network (AgNet) made its debut Nov. 14. The network is delivered to farmers and ranchers across the country via satellite television subscription. It airs Monday through Friday with nine hours of live programming beginning each day at 6 a.m. Farmers and ranchers with satellite dish capability can subscribe to AgNet by calling toll free 1-800-933-FARM. Cost of the network is $14.95 per month.

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Farmers for Responsible Media (FARM), the association formed to head fundraising efforts for Washington State apple growers involved in the Alar class action lawsuit, has a brochure available for those wishing to learn more about the organization. To receive a copy, call 1-800-275-3646. FARM has vowed to keep the public informed about developments in the farmer's suit against CBS, *60 Minutes*, the Natural Resources Defense Council and others for creating panic and devastating the apple industry with their allegations about Alar. For more information about FARM, write 4700 Tieton Drive, Suite C, Yakima, WA 98908.

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Producers signed contracts to place another 475,175 acres into the Conservation Reserve Program following the 10th CRP signup last spring. CRP contracts for 34 million acres have been signed so far. Data from the summer CRP signup are not available.

Send Meeting Notices At Least Two Months In Advance For Calendar

CALENDAR

☆ CANADA ☆

The 1992 Bee Masters Course will be offered February 10 - 15 at Simon Fraser University, Burnaby, British Columbia, Canada, just outside the scenic city of Vancouver. The Bee Masters is a week-long, intensive course in advanced beekeeping that has been offered every second year for almost 40 years. The course is offered jointly by the B.C. Ministry of Agriculture and Simon Fraser University, and includes hundreds of topics, lectures, laboratory periods, and discussion, and an optional final examination. Participants are expected to have previously kept bees and to have some knowledge about bees and beekeeping.

For further program and registration information contact Conference Services, Continuing Studies, Halpern Centre, Simon Fraser University, Burnaby, B.C. V5A 1S6 Canada, Ph. (604) 291-4910 and 291-3649, FAX (604) 291-3420.

☆ CONNECTICUT ☆

The Western Connecticut Beekeepers Association will have Dr. Clarence H. Collison Chairman, Department of Entomology at Mississippi State University.

Dr. Collison's presentation will begin at approximately 8:15 p.m. on Thursday, March 19, 1992, at the Fairfield County Extension Office, 67 Stony Hill Road (Route 6) in Bethel, Connecticut.

☆ INDIANA ☆

Purdue University in conjunction with the Indiana State Beekeepers Association will be sponsoring a meeting to be held on Saturday, March 28, 1992, from 9:30 a.m. to 3:30 p.m. at the University Place Conference Center, on the campus of Indiana University-Purdue University in Indianapolis. The program will feature research and educational programs on the biology and control of Varroa and tracheal mites.

Registration will begin at 9:30 a.m. and the meeting starts at 10:00 a.m. Parking is available. For more information call Wayne Buhler (317) 494-4912 or Duane Rekeweg (219) 728-2613.

☆ MICHIGAN ☆

The Agriculture and Natural Resources Week Beekeeping Program is March 24-25, 1992 at Michigan State University, East Lansing, MI. Dr. Larry Connor, will talk on how to manage queens, the ecology of the bees within the hive and their environment. There will also be talks on sting allergy, two-queen colonies, a panel discussion of pollination service, and information on canola production in Michigan.

In a major change, the MBA has decided to discontinue the Honey Queen Pageant. In its place will be a Workshop on Honey Marketing. Bob Smith, Executive Director of the National Honey Board will also speak. Dr. George Ayers will conclude the workshop with ideas taken from those submitted by beekeepers from all over the United States on marketing honey.

If you would like a detailed copy of the program before you arrive on the Michigan State University campus, contact Dr. Roger Hoopingarner, MSU, Dept. of Entomology, East Lansing, MI 48824. The program starts at 9:30 a.m. each day. The meetings on both Tuesday and Wednesday will be in the Kellogg Center Auditorium.

If you would like to reserve a room in the Kellogg Center during the meeting, the phone number for reservations is (517) 355-5090.

☆ OHIO ☆

The Tri-County Beekeepers Association, will hold their Workshop on Saturday, March 7, 1992, from 8:00 a.m. to 3:45 p.m., in Fisher Auditorium, Ohio Agricultural Research and Development Center (OARDC), Jct. Rtes. 83 and 250, Wooster, OH.

Check-in at 8-8:45, then Keynote Speaker, Dr. James E. Tewon "The Short, Happy Life of a Drone".

Morning sessions include Beginner's Forum; Cooking Potpourri; Simple Queen Rearing Methods (Jenter System & others); Dealing with Common Problems.

The p.m. sessions will begin with the Keynote Speaker, Mr. James R. Higgins, who will address "Bees and Their Medicinal Qualities".

Afternoon sessions include Bee Behavior: Why Do Bees Do What They Do?; Mites: Detection, Identification, and Treatment; Methods of Extracting; Bee Venom and other Medicines from Beehives.

Advance Registration is $5.00 ($6.00 at door) and preregistered lunch is $3.00which must be received by Feb. 28. Mail check ($5.00 registration or $8.00 registration and meal) with name and address to the Workshop Secretary James Burkhart, 1626 South Kohler Rd., Orrville, OH 44667. For further information contact the Workshop Secretary at (216) 857-8512, evenings and weekends.

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The Southwest Ohio Tri-County Annual Bee School will be held April 11, 1992, at Scarlet Oaks Vocational School, formerly held at Lakota High School.

Registration is at 8:00 a.m. – the program begins at 9:00 a.m. and adjourns at 4:00 p.m. A movie will be shown during registration.

Sixteen one-hour sessions will deal with equipment, queen rearing, stings, selling honey, disease, wax and candles, swarm prevention, mites, honey processing, uses, important plants and much, much more.

Registration fee of $12.00 for adults and $8.00 for youth under 18, includes a buffet lunch.

Scarlet Oaks Vocational School is located at 3254 E. Kemper Road, Cincinnati, OH. Just take Rt. I-275 to Exit 44, go south on Mosteller, then east on Kemper Road to the school. For further information, contact Steve Bartels, County Extension Agent, P.O. 958, Hamilton, OH 45012, ph. (513) 887-3722.

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The Ohio State Beekeepers Association will hold their spring meeting on Saturday, March 14, 1992, at The Red Carpet Inn North, 1212 E. Dublin Granville Rd. in Columbus (Exit 117 off 71 at 161) from 9:00 a.m. until 4:00 p.m.

Speakers include Kirk Stoller, Early Spring Management; Don Cook, Spring Feeding; Jim Tew, an overview of preparation for the honey flow; Sherry Farral and Dave Heilman, preparing gift baskets/marketing/ Gordon Ruloff, State Apiarist report, and a wrap-up, at the end of the day on a report from The Apiary Inspection Regulation Committee.

Lunch is on your own at any of several nearby locations. There will be a Directors meeting Friday night at 7:30 at the hotel.

For room reservations call (614) 885-9669. For more information on the meeting, call P.K. Flottum (216) 725-6677(D) or (216) 722-2021(E).

But Will Honey Bees Like It?

GENETICALLY ALTERED CANOLA READY

Ameri-Can Pedigreed Seed Company recently received USDA approval to conduct and has gone ahead with the planting of field trials of genetically engineered canola. The trials represent the world's first field tests of canola genetically engineered to produce a modified vegetable oil and the first U.S. plantings of genetically engineered winter canola. Planting of the trials at three sites in Southern Georgia was conducted in November and December. The varieties being tested have been genetically engineered to produce a novel oil with dramatically increased levels of stearic acid, making them suitable for margarine and confectionery markets.

"The Georgia field trials represent the first stage in the commercialization of Calgene's six year old genetic engineering program," said Eric Rey, General Manager of Ameri-Can. "Our expectation is that we will scale up trials and increase seed inventories over the next few years and that we will have genetically modified oils in the marketplace by the mid 1990's."

"In this year's trial, we will be looking at both agronomic performance in the field as well as the makeup of the final oil product," Rey added. "In greenhouse tests, the engineered plants produced the high stearic oil expected but in every other way performed exactly like the non-engineered control variety."

PERIODICALS

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length. When an individual takes up with bees, they often become totally engrossed with the subject, at least initially. Bees may be the only thing he or she thinks about for some time. Everyone around is forced to share in all the revelations that come to this neophyte. "Did you know that bees will travel two miles to find nectar?", or "Did you know that the queen can lay 1500 eggs in one day?", or any of dozens of other interesting facts – well, ok, but I thought they were interesting. A subject that could well be included in every bee school curriculum is "Keeping quiet about your hobby". How many of us would pay attention, though?

Without question, beekeeping is unique in the way others react to it. People enjoy any number of hobbies; tropical fish, photography, stamp collecting, gardening, and on and on. How often, though, does a tropical fish fancier hear the question "How are the fish today?" Rarely, I suspect.

A photographer is seldom asked if he has made any good pictures lately. A gardener is not often queried about his garden except perhaps by another gardener. Beekeeping, though, is different. We get questions, we get comments, and we get strange looks.

Sometimes the questioner is a person who wants to be a beekeeper – someday. For instance, we had a visitor recently. Actually, he did not ask a question. He saw the beehives in our yard and started talking. "I see you have some bees out there. Fascinating aren't they? I've always wanted bees. I'm going to get a hive one of these days. I know quite a bit about them already. I learned from my cousin. His father-in-law grew up on a farm and they had a couple of hives so my cousin knows all about bees. He told me about them once. Did you know that you can get five or six hundred pounds of honey from each hive every year. Just catch a swarm and you're all set. They'll do the work." And so on.

Now that this individual has conversed with you, he is doubly an expert. He can cite either you or his cousin. In fact, he can cite you as his authority, or he can tell people that he taught you everything you know.

It's O.K. if this type of individual asks you "How are the bees?" He won't give you a chance to answer. He'll steam right ahead and tell you how they are. □

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BOTTOM·BOARD

"So, How Are The Bees?"

RICHARD E. BONNEY

Being a beekeeper can be trying at times. Take the other night. There I was in a crowded room with a group of non-beekeepers. (They are nice enough people, these non-beekeepers, but they are a little strange sometimes.) An acquaintance appeared in the doorway across the room and happened to spot me as I stood there gaping about. Immediately, she waved and called out, "Hi there, how are the bees?", just a friendly greeting from a very nice person. Most of the people in the room heard, and turned first to discover the questioner, and then followed her gaze around to me. Just about everyone in the room knew me and knew that I was a beekeeper. Deep down, they knew the question for what it was, a greeting. But even so, conversations stopped as they all prepared to listen while I gave my wondrous response

If I had said something like "Hi, Sally, how are you tonight?", all those listeners would have lost interest immediately and gone back to their own conversations. I wasn't prepared, though. She and I had recently had a semi-serious conversation about bees so my first reaction was that this was a serious question. I did not take into account the setting. Instead, I tried to tell her how the bees are – across a crowded room with everyone listening. Well, you know as well as I do that there is little to say about the bees in the off season. I hemmed and hawed a bit and said something about not much happening right now. Finally they all gave up and turned away. Even Sally started talking with someone else.

This never happens to you, does it?

Sure it does. How many times are you asked that question in the course of a busy day? And how do you respond? Do you have a stock answer or two to throw out, or are you caught by surprise every time. I have heard the question at least three times in the past week, each time in a public place with a bunch of people around. There's nothing wrong with the question. It's just a friendly acknowledgement of you and your somewhat strange (to them) pastime.

It's a way to pass a greeting, or to open a conversation. And sometimes it is asked in all seriousness by a person who may know nothing about bees but is genuinely interested in you and knows that the bees are important to you.

But it does show how people see you. Before all else, they think of you as a beekeeper, maybe a little bit of an oddball. Perhaps they are a little in awe of you, too. After all, bees sting. That's another whole line of questioning though, isn't it?

No matter what is in the questioner's mind, though, you are expected to respond somehow. First, of course, you must figure out how serious the question is. Is it simply an opening ploy, a greeting, like – "How are you today?" Perhaps being able to ask about the bees is a relief for people. They have an alternative to asking "How are you?" as they may do so many times in the course of a busy day. Since they are not really asking about the bees there seldom is any meaningful answer to that version of the question. You can say almost anything.

And then there are those who *really* care, either about you or about the bees. You can sometimes get away with a throw-away answer in this case but be careful. An extra moment of thought on your part may save some hurt feelings.

I sometimes get impatient with it all, though. Part of my problem is no doubt my own fault. As often as I have thought about this, I am never really ready for the question and seldom take it as usually intended, an opening ploy. I tend to react to it as a serious question and I try to frame a serious answer. It doesn't work.

Of course, we have probably brought this on ourselves. How does it happen that all of our acquaintances know of our interest in bees? Because we told them, and probably at some

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