
BeeCulture
NOV 1996
KEITH DELAPLANE - Winter Management Southern Style
DEAN BREAUX - Fall & Winter In Central Florida
DICK BONNEY - Let Alone Beekeeping
JIM TEW - Making Frames Fast & Efficient
HONEY PRICE REPORT - Every Reader Has A Say This Month

Bee Culture
THE MAGAZINE OF AMERICAN BEEKEEPING

NOVEMBER 1996 VOLUME 124 NUMBER 11

FEATURES

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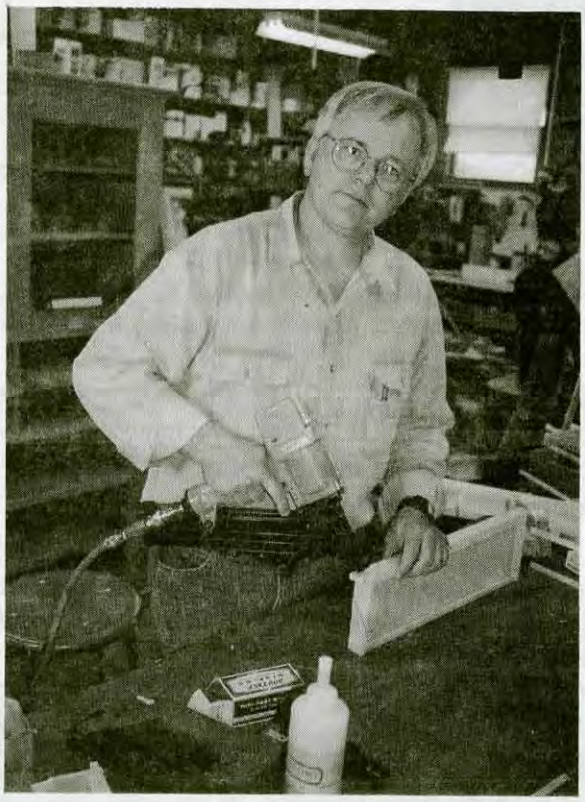
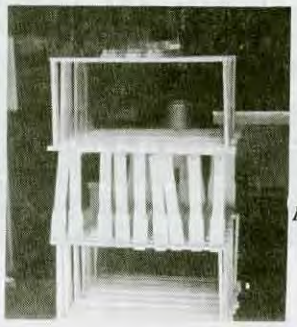


COVER

Jim Tew explores both the basics of frame construction, and the economics of mechanization this month in his article on page 626. This subject is seldom explored in other than a trial and error method, or by having the opportunity to actually visit with someone who has. The risks of investing in power equipment can be minimized with a little background information. And, as simple as a compressor and pneumatic stapler sound, far too many beekeepers haven't yet explored their advantages.

photo by Kim Flottum



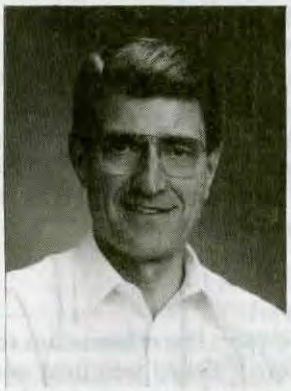
Build Frames Fast & Correctly, Pg. 626

DEPARTMENTS

Build This Honey Heater At Home, Pg.640

Home Harmony, Pg. 645

COLUMNS



JOHN ROOT
Publisher

KIM FLOTTUM
Editor

INNER COVER

One of the best benefits of this job is that I get to go to a lot of beekeeper's meetings. I speak at some, just attend some, and even run a few once in awhile. As a result I hear what people who attend these meetings think, what they know, don't know, want to know and, best of all what works for their group, and what doesn't.

Most groups are more alike than not. Most are pretty much like yours I'd guess. And, probably like yours, one question that comes up frequently is, "Why don't these new people get more involved?"

We actually recruit new members. It's an ongoing activity. For some clubs it's easy – lots of money, good programs and a large population of beekeepers to draw from. For others it's not so easy. But most still have that new member problem.

So stop and think about this for a minute. A new member shows up at a meeting. Maybe they got a 'New Member' kit, maybe not. Probably not. They come in, maybe chat a little with someone, look at the table with magazines and catalogs (you have some, right?), then take a seat in the back and wait to see what happens.

The meeting begins. They may get singled out as a new member, welcomed, and encouraged to ask questions, participate or just watch. If they're lucky a member or two, or three, will chat for a bit when the meeting (business and entertainment) is over. But most regulars touch base with friends and other members, grab a cup of coffee, donut and take off. End of meeting.

Next month they're not a new member, so they don't get that special attention, and if they tend to be a bit hesitant to speak out or to initiate conversations they disappear, so to speak. Sound familiar?

Now most, not all but most new members start out with a desire to learn more about bees and beekeeping, and if the group provides that they'll keep coming. Gradually, over time they'll make friends, maybe help out at the fair or bring refreshments.

So, lets say your group meets 12 time a year, for about an hour and a half each time. Add in a four hour shift at the fair or a field meeting and after an entire year, this new member has been exposed to your group for a maximum of 22 hours (assuming they made every meeting). Now, put this is in another context. The last time a new person started working where you do, how well did you know them, and how well did they know you after the first three days? By then most new people had barely found the restrooms, let alone jumped into the social and cultural environment there with both feet. And that's after three, eight hour exposure periods. Not a dozen or so short stints, a month or so apart.

Certainly, if you're new to your club I urge you to get involved, to press the issue of meeting people, asking questions and helping out. But that's easier said than done.

The responsibility to encourage and assimilate new members lies with the current members, especially the officers. And, since they are the ones who most often tell me, when I visit, that it's so hard to get the new people involved

•

Just in case you weren't aware, the referendum to continue the operation of the National Honey Board was held earlier this Fall. Everyone who contributes their penny-a-pound to this organization was eligible to vote. But wait a minute. Let me give you some background, because there are still lots of people not familiar with The Honey Board.

The Honey Board is a group of people, elected by members of the industry, charged with increasing the demand for honey. There are producer, packer, importer, co-op and public members. They form the Board and are elected by a nominations committee, which has a representative from every state. The Board in turn, hires a staff to maintain the continuity of the programs developed by the Board. Activities include promotion, public relations, honey product research and industry relations, among others.

Anyone who sells honey is supposed to contribute a penny a pound

Continued on Page 652

Keeping New Members; Honey Board Referendum

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Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

Publisher	**John Root**
Associate Publisher	**Robert Stanners**
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Photo Reproduction	**Moonlight Graphics**
Circulation & Advertising	**Dawn Feagan**
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Subscription Information
United States, one year, $16.50; two years, $30.00. Newsstand price: $1.95. All other countries, (U.S. Currency only), $9.50 per year additional for postage. Send remittance by money order, bank draft, express money order, or check or credit card. Published monthly. Change of Address: Return form on this page. Articles are solicited. Opinions expressed by the authors are not necessarily those of the publishers.

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Postmaster
Please send form 3579 to: The A.I. Root Co., 623 W. Liberty St., Medina, OH 44256 Tele. 330-725-6677.

Circulation Figures reviewed monthly by Ernst & Young Accounting Firm, and are available on request.

The A.I. Root Co., Publishers
623 W. Liberty Street
Medina, Ohio 44256

ISSN 1071-3190

Periodicals Postage Paid at Medina, OH and additional offices.

KEEP IN TOUCH

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MAILBOX

Mite Solution, Solution?

An update on Mite Solution may be timely. Mite Solution has proven to be an effective control agent for mites in a honey bee colony. It is a natural substance that is approved as a food additive by FDA and FIFRA. Mite Solution should not be under the purview of the EPA. The EPA has a problem with that however, because they simply do not know how to abide by their own law 'simply' So they required me to request waivers for fees, claiming once again that we at Tuttle Apiary Labs had done all testing necessary except that they wanted another mass spectroscopy done to see if there was any residue in honey or wax when a hive was treated with Mite Solution, and if so how much. Well several large beekeepers from around the country, and a few smaller ones sent us samples of their honey and wax that was taken from hives exposed to Mite Solution.

The report came back from the analytical lab, "no trace of the active ingredient in Mite Solution was found in any of the samples of honey or wax " so naturally we were happy, but even if there had been traces it wouldn't matter because it's edible.

I also supplied the EPA with copies of letters of beekeepers who have used Mite Solution, and were ordering again, who made statements which indicated their success from using it. In addition I assured them that there has never been even one complaint against Mite Solution in four years, and that mites do not seem to become immune to it. Still the EPA doesn't seem to understand that unless something is done soon, there will not be any beekeepers left to worry about a mite problem.

Steven L. Tuttle
3030 Lewis River Rd.
Woodland, WA 98674

Queen Cell Question

This is a postscript to my letter in the July, 1996 issue regarding eggs in queen cups. For the first time I have discovered an egg in a queen cup.

I don't know what to make of it and, of course, have no idea whether a worker or queen placed it there. The colony had not raised any queen cells in the 50 days since I requeened the hive.

Dan Hendricks
Mercer Island, WA 98040

Super Super Seal

I would like to take this opportunity to congratulate you and the staff of *Bee Culture* for the superb quality and information the magazine publishes. The better part of my beekeeping knowledge has been "gleaned" from your articles and the Mailbox.

For all the good ideas I've taken from *Bee Culture* I am returning a few of my own.

For those beekeepers using paradichlorobenzene for wax moth control, you can achieve an air-tight seal on stacked honey supers by using a can of foam insulating sealant. I use a telescoping cover for the bottom. This cover is reversed and the first super fits inside with enough room to run a bead of foam around the edges. This forms an air-tight seal at the bottom. For each additional super, I run a bead of foam around the edges and stack the next super on top. In between each super, I put a handful of PDB crystals on a piece of cardboard. I stack the medium depth supers 12 high and top off with an inner cover with a bead of foam. The inner cover hole I cover with a piece of duct tape. This I fill with paradi crystals. Every couple of months I check to see if more is needed. Just lift up the duct tape and have a look. The whole stack of supers is so air tight I haven't had to add any additional PDB.

In the Spring you can separate each super as you need it. The foam comes off with a pass of the hive tool. Since foam is expanding you don't have to use very much to get a good seal. The only difficult part of this operation is lining up the top super onto the bottom which has the bead of foam. If you don't get it just right you will roll the bead of foam off the edges. Wear gloves as foam sticks to skin.

Don Turbeville
Ocean Springs, MS

Bees Converse

Born and raised in Hawaii and grew up in a sugar planation, my dad had a beehive just to supplement our family needs of honey, and all my knowledge of honey bees was taught to me by my dad.

As I grew older, I also had a beehive. Bees always fascinated me, and I always enjoyed harvesting my honey which was twice a year in Hawaii and five to six gallons each harvest per hive; the best part was no *Varroa* and Tracheal mites, but you had to check for the wax moths.

After my wife and I retired, we moved to College Park, GA and I have four hives. I have found it is a struggle to raise bees here, treating for mites and feeding them during the winter months, which we never did in Hawaii, but the reward is very satisfying when the honey flow came in, and I love it.

Anyway, reading my *Bee Culture* magazine, which I enjoy very much, there is so much controversy about bee signals and the waggle dance to show other bees where the nectar is that this bee found. I personally think that bees talk to each other, and this is my story that I want to share with you.

One morning back in Hawaii, my wife and I went out to our back yard to check our vegetable garden which was to one side of my six beehives. As we passed near the hives, I noticed a bee crawling on

Continued on Next Page

MAILBOX

the ground, it couldn't fly, it's legs bulging with pollen. It was crawling towards a hive about 10 feet away, so I took the bee and put it on the landing platform of this hive.

My wife and I were stunned and amazed to see 10 or 12 bees immediately circle this bee that didn't move a fraction of an inch. All of a sudden a bee came out of the hive, two bees opened up the circle to let it approach this wounded bee. We watched as their wiggling antennas were just about touching for about 30 seconds. Finally the inspector bee turned as the circle opened up and they let the wounded bee into the hive.

This is why I believe that bees do converse with each other.

Manuel P. Thomas
College Park, GA

Editor's Reply: *Guard bees tend to be less fussy about who gets in and who doesn't when there's a honey flow on (permanent in Hawaii I presume?) and a returning forager has goodies she wants to unload. The 'message' given, and received was 'free food!'*

Olive Oil Treatment

While travelling to Columbia, Maryland this Summer, I happened upon a beekeeper who had the strongest hives I have ever seen. Granted, he had considered location, shade, water, flight path, etc., but he also had an unusual treatment for his bees.

Pete Barlois explained that when he was a young man in Greece they were bothered with ticks on their goat herds. Usually by the first of June the tick infestation was heavy and the ticks cluster on the backs of the goats. His family would paint the backs of the goats with a heavy solution of olive oil. Within three days the ticks were gone and did not reappear until the following year.

When he first started to hear about the tracheal and *Varroa* mites he thought some of the same treatment might work for his bees.

Somewhere between the middle and end of June he removes his honey supers. Over the top of the queen excluder he spreads a sheet of newspaper and coats it heavily with olive oil. He then replaces the supers. The bees come in contact with the oil as they remove the paper barrier.

He extracts his supers between two and three times a year and treats with the Apistan strips in the Fall. He has yet to lose a colony to a mite infestation while his neighbors are experiencing the normal infestation for the area.

When you consider the restrictive use of chemical treatments (Apistan® Strips) of mites and the life cycle of the mite shown by Diana Sammataro of Ohio State University with its mid-Summer peak population, I wonder if his method which forces the bees into a timely, safe, mid-season treatment isn't the modification we need to a mite control program?

Jim Behling
Mantua, OH

Mites, and Other Bees?

A couple of words from the sunny southwest!

The mites finally arrived, and, unprotected (I thought I was in a too-remote location to be affected) I went from 24 colonies to four. I did catch two swarms from I don't know where and so am back up to six now. Good mesquite bloom and my two acres of irrigated sweet clover – the survivors really made a crop!

The interesting thing that I've noticed is that there aren't *any yellowjackets at all.* And in addition, I've only seen two paper wasps!

There were lots of bumblebees and carpenter bees early when my catalpa tree bloomed – but none now!

Are there any words from "all over" about a decline in bumblebees, yellow jackets and wasps?

I know that these insects aren't honey producers, but perhaps we as a group are observant and might come up with some sideline observations. Surely we should be considered trained observers.

Are the mites affecting them too? Is it a normal cycle? Or is it just a local thing?

Henry Cole
Cliff, NM

Editor's Reply: *Neither of the mites that attack honey bees bother with other species of insects. At least as far as anyone has noticed. The reduced population of feral bees and wasps this year in many parts of the country can be attributed to: A harsh Winter; cool, wet Spring; Summer drought; or, cause unknown – take your pick. The erratic weather played havoc with many overwintering insects. Yellow jackets require other insects to feed upon – reduced prey means reduced predators. Also, a mean Winter destroyed many predators outright.*

Resistant to *Varroa*?

I recently read an article that discussed mechanisms of *Varroa* resistance. I have seen a few things that also seem to have an effect:

1. Swarming tendency – A heavily infested colony swarms late in the season. This colony carries mites to its new home, but not at the infestation level of the parent colony. If the swarm can store enough honey to overwinter, and goes through a broodless stage during Winter, then in the Spring the colony has few mites left. The parent colony dies out over the Winter. The swarm survives but repeats the cycle the next year.

2. Drone rearing tendency – A colony which goes through a mid-summer stage without any drone brood seems to have a reduced level of infestation afterwards. This stage has to last at least 45 days to have a significant effect.

3. Separation from other colonies – I have set out colonies 50 to 100 yards from my apiary and found that as long as the colony is not near others, the *Varroa* mites spread much slower than when colonies are within a few feet of each other.

I live in an area which has been heavily infested with *Varroa* since 1992. I treated my colonies in the Spring of 1994 but did not treat that Fall. By the time I realized there was a problem, most of my 15 colonies were dead. I split the remaining colonies in the Spring of 1995 and actually caught several swarms from feral colonies. I watched the swarms carefully to see if they showed any signs of resistance. Most became heavily infested by the Fall so I treated

them with Apistan. One swarm developed a very light infestation so I decided to raise queens from her. I raised six daughter queens in the Spring and two of them showed light infestation by Fall while the other four were heavily infested. The level of resistance is not enough to avoid treatment altogether, but it is enough to avoid having to treat twice a year with Apistan®. I don't know the exact mechanisms of this resistance, but that they are less infected is obvious when I uncap a section of drone brood and they are not covered with *Varroa* like the rest of my colonies. Next year, I plan on raising enough queens from these colonies to re-queen all of my hives.

Darrel W. Jones
Rainsville, AL

Forgotten Pollinators Review, Reviewed

I find your advice, "I do recommend you read this. Just skip over the beekeeping parts." both absurd and astonishing. Only a few sentences previously you say "Their data, relative to our industry, is dated, invalid, limited and myopic in scope." If the data presented in your area of expertise is flawed and not to be trusted, on what basis do you think the data outside your area of expertise is any less flawed and thus more trustworthy?

Dr. Jerry E. Pournelle, in the "CP Snow Memorial Lecture" at Ithaca, NY in 1982 said about data, "Novelists need to be plausible, and don't need data at all. Lawyers want evidence, which is to say, data selected to support a position, and they can and do ignore anything that contradicts their position. Scientists need data and must explain it all including the parts that contradict their theory.

"Of course you can prove anything if you can make up your data."

In my opinion, one of the serious problems in today's society is the difficulty of finding and identifying valid and trustworthy data amid the morass of untruths, halftruths, disinformation, and made up data. "Environmental activists" seem particularly guilty of pretending to be scientists, but doing and saying anything to win. We need dependable data, not a novelist's "plausible story" or a lawyer's evidence."

I know nothing of the authors or their reputations. I am willing to trust your expertise as an apiculturist. I agree that the subject of pollinators and food production is an important one – far too important to do anything other than discard "invalid, limited and myopic" data.

Please don't recommend questionable sources.

Michael J. Schuerger, Sr.
Medina, OH

Editor's Reply: *The author's of this book are not beekeepers, which was unfortunate. While the vast majority of this book did focus on their respective specialities, they included 'comparison' information to the only industry their subject could be compared to – beekeeping. They shouldn't have and needn't have done this to justify their book's topic. Reviewers from other sources (*NY Times, Science*) seem to agree.*

Excellent Timing

I want to compliment you on a great magazine and let you know how much I appreciate the info contained in each issue and how much it has helped me be a successful, small scale beekeeper. My subscription is in its third year and I have been very satisfied.

Most amazing is your knack for excellent timing on new features and articles each month. It seems that just as I start looking for answers on a certain subject or thinking of new things that the magazine can offer BINGO there it is in the next issue!

I continue to use past issues as a current reference and really like the fact that you add an end-of-year index to your December issue. Your magazine provided me with much of what I needed to know as I became more deeply involved in beekeeping.

Keep up the good work!

Tim Peters
Kirby, VT

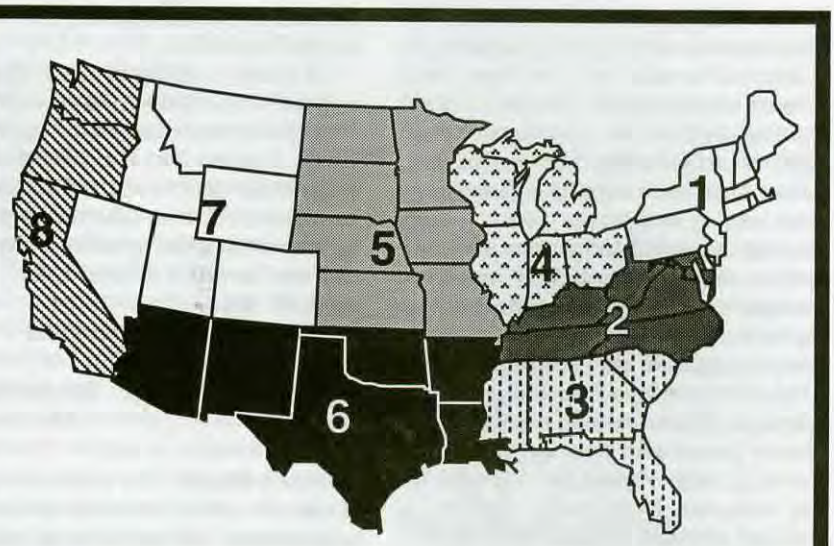
Editor's Reply: *Thanks!*

NOVEMBER Honey Report

NOVEMBER 1, 1996

REPORT FEATURES

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



	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# Light	71.79	62.75	64.53	68.47	64.13	54.00	64.53	57.50	48.00-81.00	64.59	62.86	45.10
60# Amber	65.48	58.88	57.00	67.07	59.40	53.00	57.20	57.50	34.20-78.00	59.40	59.17	42.90
55 gal. Light	0.92	0.85	1.01	1.05	0.98	0.83	1.01	0.89	0.75-1.30	0.97	0.92	0.66
55 gal. Amber	0.84	0.70	0.91	1.02	0.92	0.76	0.91	0.89	0.55-1.30	0.88	0.89	0.61
Wholesale - Case Lots												
1/2# 24's	26.19	32.79	22.80	25.02	21.64	28.00	28.91	28.40	20.00-39.25	27.48	27.30	22.70
1# 24's	38.22	38.18	39.00	37.95	40.75	42.00	40.87	39.60	34.80-48.00	39.81	39.06	33.17
2# 12's	37.93	36.34	47.53	35.24	49.33	42.00	47.53	33.00	32.00-72.00	38.58	35.49	30.83
12 oz. Plas. 24's	33.40	32.28	36.26	31.72	31.41	32.00	36.26	31.80	26.00-48.00	34.78	35.90	28.17
5# 6's	35.22	38.15	35.85	37.67	33.32	36.00	35.85	35.00	24.00-45.95	37.60	38.95	32.45
Retail Honey Prices												
1/2#	1.65	1.84	2.00	2.17	1.52	2.50	2.83	1.65	1.00-3.00	1.70	1.67	1.37
12 oz. Plastic	2.07	2.11	2.75	1.85	1.84	2.50	2.40	1.94	1.59-3.50	2.12	2.21	1.71
1 lb. Glass	2.48	2.51	2.88	2.36	2.42	2.79	2.84	2.44	2.00-4.00	2.53	2.43	1.95
2 lb. Glass	4.01	4.57	4.43	4.29	3.97	3.27	4.27	3.69	3.25-5.40	4.16	3.97	3.33
3 lb. Glass	5.24	5.81	6.50	3.99	5.15	5.55	5.50	5.14	3.99-7.00	5.50	5.41	4.48
4 lb. Glass	6.00	5.31	7.00	9.75	5.85	6.30	6.33	6.33	2.69-9.75	6.56	6.90	5.74
5 lb. Glass	8.17	8.33	8.00	9.90	7.77	7.75	9.06	7.89	6.20-12.50	8.49	8.47	7.07
1# Cream	2.94	3.55	3.33	2.24	2.74	3.52	3.33	2.74	2.00-4.95	3.05	3.23	2.44
1# Comb	3.67	3.73	3.50	4.35	3.34	4.50	3.64	3.59	1.95-5.00	3.96	4.17	3.45
Round Plastic	3.81	3.50	4.65	4.65	3.50	5.75	4.65	3.19	2.95-7.00	4.00	3.86	3.07
Wax (Light)	2.62	1.95	2.20	3.27	2.25	3.50	2.98	3.00	1.25-5.00	2.70	2.72	1.88
Wax (Dark)	2.34	1.75	1.75	3.50	2.83	3.07	2.83	2.63	1.10-5.00	2.39	2.36	3.81
Poll. Fee/Col.	30.58	25.00	30.00	32.50	35.00	21.50	35.00	31.00	21.50-55.00	32.95	33.77	29.70

MARKET SHARE

Still looking for reporters in the western states. We realize there are fewer beekeepers out there per square mile, but we do send a considerable number of magazines there, so we know there are some. The Honey Report form in the back (pg. 643) is for everybody for our January issue's new and better price report. Check it out, fill it in, and send it back.

Region 1

Prices up pretty much across the board, with wholesale leading the way. Demand steady, to increasing just slightly. Sales strongest in bulk, as major packers dominate retail area, but bears and 1 lb. strong at local markets. Colonies in good condition, treatments in place.

Region 2

Bulk wholesale prices steady to lower, but wholesale and retail inching up. 60s and 1 lb. most popular sizes, but bears strong. Local markets handle smaller sizes, and outside competition not quite as strong. Colonies strong, mites low and Fall flow seems adequate for overwintering.

Region 3

Prices steady but demand increasing some, especially for specialty crops. One lb. and qts. popular, but most sold bulk (volume, not retail). Colonies in good condition.

Region 4

Wholesale prices up, but retail only steady to even decreasing in some places. Some resistance at that level to higher prices. One lb. bears and 60s popular here, but bulk in drums handled, too. Colonies better this year than in several. All treated, of course.

Region 5

Although moving around, and settling in, prices pretty much stable, with demand slowly increasing with cooler weather. Popular containers include the bear and one lb., but 2, 3, 5 lb. and gallons popular, too. Colonies strong on late flows and low mites.

Region 6

Prices stable to a bit lower bulk and wholesale, strong at retail however. Demand steady, but not looking to increase according to some. Price resistance being felt. Bulk accounts for most sales, but pints, quarts and larger popular, along with bears. Colonies strong so far, but treatments ongoing.

Region 7

Prices steady to increasing slowly, especially at wholesale. Demand only steady. Popular sizes at retail are 1 lb., bear and quarts. Bulk carries the day, though. Colony conditions all over the map. Dry Summer, pesticides and mite pressures in various areas causing problems.

Region 8

Prices steady but demand slowly increasing. Popular sizes are bears, 1 lb. and quarts, along with lots and lots of 60s. Colony condition fari to great, as many make sure pollination units up to contract levels by January/February.

LOOK WHAT'S NEW!

Magic School Bus Visits A Beehive

The Magic School Bus Inside A Beehive. Written by Joanna Cole and illustrated by Bruce Degen. Published by Scholastic Press, 47 pgs., hardcover, $15.95. ISBN 0-590-44684-3. Ages 6-9.

If you have elementary school-aged children (or grandchildren) you are probably at least somewhat familiar with *The Magic School Bus* book series. These books are centered around Ms. Frizzle and her science class. Each book takes them on their magic school bus into the center of whatever the topic may be – inside the human body, inside the solar system, inside a hurricane, and other interesting places.

The latest book in this series takes the bus, which takes on the appearance of a skep-like beehive, and it's group of somewhat reluctant students and always eager teacher, deep inside a beehive. The students and teacher are transformed into bee-like appearance so they "blend" in with the other bees. This lets them get up close and personal with the bees.

As the children gain entrance into the hive they are met by the guard bees. As their journey continues they encounter the queen, the workers and the drones – learning about each bee as they go. They witness the bees making honey, shaping the wax, feeding the larvae and all of the other activities that take place in a hive. The children are encouraged to take part in their activities.

Scattered throughout the book are sidebars with information on all aspects of bees, beekeeping, hives, and all the activities that go on.

This book is filled with accurate information and written in the same easy to read and follow format as the others in this series. It appears that the author did excellent research on this topic and the book is beautifully illustrated. This book presents an excellent opportunity to spark a child's interest in bees.

New Internet Book

The Farmer's Guide to the Internet. Henry James, with Kyna Estes. 330 pp. soft cover. ISBN 0-9649746-1-4. $19.95. Published by University of Kentucky (888-885-9800)

No, not a single mention of beekeeping occurs in this book. Not one. But if you are not yet using your computer to gain access to EMail, the World Wide Web, Gopher or any of the rest of the services your computer, and a modem can give, this book will take you effortlessly, and unexpensively there.

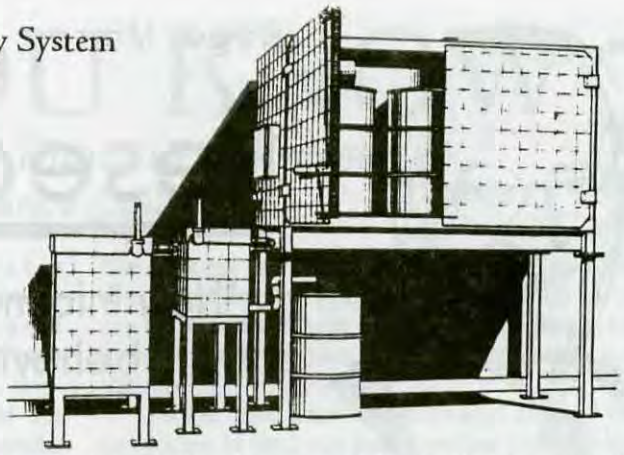
Featuring chapters on getting started by using the right equipment (and troubleshooting), to finding the least expensive carrier, using that carrier most efficiently and getting the most for your money. Since farmers, and many beekeepers live in a rural environment, there often is not a local-call connection and long distance bills add up quickly.

The remainder of the book features hundreds of Web pages of interest to agricultural-minded people, and, even beekeepers will find much useful information here. For instance – the weather, gardening, rural life, newsgroups, state-by-state listings featuring Extension hook-ups and hundreds of federal Ag hook-ups.

This book will pay for itself in time (and money) saving tricks in only a month or two. It's worth it.

Kim Flottum

Cowen Introduces Wax Recovery System



Through the years, there has been a need for a wax recovery system which can melt wax cappings to produce a high grade of wax and marketable honey, reducing the cost of labor and the need for space that storing unrefined wax requires.

In answer to these concerns, Cowen Manufacturing introduces a highly efficient and successful Wax Recovery System. This is a specific gravity system constructed of double-walled insulated stainless steel. The System takes three barrels of cappings at a time in the convectional oven. As the temperature of the oven rises, the honey exits the oven into the separator, then enters the honey drum for storage. Then, as the temperature approaches 185-200°F, the wax is melted and enters the Separator, where it floats off the top into the wax storage tank. The separator portion of the system is heated electrically by a hot water jacket and a radiant element in the lid.

The wax storage tank is also electrically heated by a hot water jacket. The wax temperature is held at approximately 165° and the wax is stored over water to help filter impurities. All temperatures in the system are controlled by microprocessors and are programmable to fill the needs of any commercial honey producer. One user states: "The Cowen Wax Recovery System is an exceptionally clean, trouble-free system. The wax comes out choice (candle grade) and the recovered honey is bottle grade. With this system we can process all of our cappings as they are produced, eliminating the need to store them until the extracting season is over. Last year we processed 10,000 lbs. of wax without a major problem. This system is well worth the price, $12,500 is a bargain." Jim Nesti of Hot Springs, South Dakota. For more information, contact Cowen Mfg. at P.O. Box 399, Parowan, UT 84761-0399, Ph. 801-477-8902

Value Added Products Book

Value-added products from Beekeeping. R. Krell FAO Agricultural Services Bulletin 124. 1996. 409 pgs. Soft cover. ISBN 92-5-103819-8. $42.00. Available from Unipub. 4611-F Assembly Dr., Lanham, MD 20706-4391.

This book was produced for the purpose of giving people information on how to use products of the hive – honey, pollen, wax, propolis, royal jelly, venom, honey bees and cosmetics. Each product is a chapter and goes into detail on physical characteristics, composition, physiological effects, uses, collection (harvesting) methods, processing techniques, recipes, market outlook and more.

This book isn't about producing honey in developing countries. Rather, it's an information source for anybody interested in increasing their product line, marketing penetration or production or harvesting techniques.

Information presented isn't earth-shaking new, but the amount of information is amazing. To get this much you'd have to own 4, 5 or more individual books. It is especially useful for anyone teaching, or consulting in the beekeeping industry.

Kim Flottum

Arizona AHB Video Available

The University of Arizona Honey Bee Education Committee has developed the Africanized Honey Bee Training Manual to assist individuals interested in training others about honey bee safety and awareness. The manual contains a slide set with script, public service announcements, two videos, and text written in an entertaining and easy-to-understand style. It is an ideal way for homeowner associations, garden clubs, church organizations, etc. to educate members about these new and more highly defensive honey bees.

The videos included in the training manual are: Africanized Honey Bees in Arizona, a comprehensive overview of Africanized honey bees since their arrival in 1993, and Africanized Honey Bees, a video of the 37-slide set narrated by a professional. Camera-ready copies of five pamphlets on topics ranging from bee proofing your home to outdoor recreation safety tips are also included.

The manual is available from the Publications Distribution Center at 4042 North Campbell Avenue in Tucson, Arizona 85719 for $55.00 plus $7.50 shipping and handling. Ask for publication number 195018 and make checks payable to The University of Arizona.

For further information contact Roberta Gibson, Research Specialist, Maricopa Agricultural Center (520) 568-2273.

Roger Morse

Research Review

"New information on swarming, hygenic behavior and Varroa control."

Bees in colonies that swarm continue to forage and collect pollen and nectar even on the day the colony swarms. They do so both before and after the swarm departs. The data supporting this statement come from observations on only two colonies; however, they are consistent with some other observations that have been made. Daily flight activity was measured by counting the number of bees entering and leaving during 10-minute intervals. The author concludes that honey bees "are able to pursue both swarming and foraging simultaneously."

Swarming in honey bees is still a mystery in many ways, but several papers in recent years are shedding light on the subject. The paper from which I gleaned the above information does not mention several other factors relating to swarming that need to be integrated with this information. For example, we know that about 80 percent of the bees in the departing swarm are engorged as are those that remain behind. Do engorged, or partially engorged, bees forage?

Swarming robs beekeepers of their bees. It is, after disease control, the single most difficult honey bee management problem.

Testing Hygienic Behavior a Problem

A popular method of testing hygienic behavior in honey bees is to study the rate at which bees remove capped freeze-killed brood when it is placed in their midst. Bees that are hygienic are thought to be more resistant to American foulbrood and other diseases because they remove the sick and dead before they can infect others, and thus the importance and value of this test. If the bees in a hive remove all of the dead brood from a piece of comb about two by three inches in 48 hours, they are considered hygienic.

However, tests conducted in the Netherlands indicate there is a problem using this technique. Even bees in standardized colonies show great variation in the rate at which they remove freeze-killed brood. Also, "the earlier the brood is killed after capping of the cells, the faster it will be removed by the bees." Removing older dead brood from a comb is apparently more difficult. The authors of this paper report that using freeze-killed brood from the same colony that is being tested "is not important, which simplifies testing considerably."

Natural Control of *Varroa* Mites

Most beekeepers are not pleased with the fact that you must use medications to keep bees alive today. *Varroa* mites are so destructive that there is no alternative. It is thus refreshing to learn about natural processes that might be substituted for chemicals.

Tests in the Netherlands show that pupae of the African cape honey bee (from the tip of South Africa) develop in roughly 23 hours less time than do Carniolan bees. The Carniolan bees are widely used in Europe and to some extent in the United States. What was found was that fewer *Varroa* mites had time to develop in cape bee cells than in cells with Carniolan pupae. The mites were not eliminated, but their numbers were greatly reduced.

The importation of the cape bee is not an answer to our problem with *Varroa* since cape bees have other problems and are not good honey producers. They develop laying workers quickly and also parisitize colonies of some other honey bee races. However, selecting among our own bees for those that have shorter pupal development times is a real possibility.

Grooming off, biting and the dumping outside of *Varroa* mites by some European honey bees is the most popularly thought of method of *Varroa* control. It is worthy to note that other methods are being examined. BC

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? DO YOU KNOW ?

You Need To Know Bee Diseases

Clarence Collison

To be successful, each beekeeper must develop a bee disease management program based on periodic colony inspections. The parasitic mites have made believers out of many beekeepers, who in the past did not worry about the various maladies that can affect colony health. Beekeepers must learn to recognize the symptoms of the various bee diseases and know what corrective actions must be taken upon finding evidence of their presence. The process of disease diagnosis begins when the beekeeper enters the apiary and continues as the colonies are broken down and examined. Colony health must be a major consideration in the fall if colonies are to survive the winter.

Please take a few minutes and answer the following questions to find out how familiar you are with bee diseases and parasitic mites.

The first fourteen questions are true or false. Place a T in front of the statement if entirely true and F if any part of the statement is incorrect. (Each question is worth 1 point).

1. ___ Sacbrood infected larvae are unable to molt from the larval to the pupal stage.
2. ___ Nosema disease does not infect honey bee larvae and newly emerged bees are always free of infection.
3. ___ Nosema disease is the primary cause of dysentery.
4. ___ European foulbrood is caused by a spore-forming bacterium.
5. ___ American foulbrood is a viral disease of honey bee larvae.
6. ___ Larvae infected with European foulbrood that survive produce pupae of subnormal weight.
7. ___ The bacterium that causes European foulbrood multiplies within the mid-gut of the larvae.
8. ___ European foulbrood is usually a seasonal disease.
9. ___ Death from American foulbrood occurs during the larval stage.
10. ___ Male and female tracheal mites migrate between adult worker honey bees within a colony.

Larvae die after the cells have been capped.

11. ___ Chalkbrood
12. ___ American foulbrood
13. ___ European foulbrood
14. ___ Sacbrood

Multiple Choice Questions (1 point each).

15. ___ A colony suffering with European foulbrood is normally treated with:
    A) Fumidil-B
    B) Formic Acid
    C) Terramycin
    D) Apistan Strips
    E) Menthol Crystals
16. ___ European foulbrood is caused by:
    A) *Bacillus larvae*
    B) *Melissococus pluton*
    C) *Bacillus pluton*
    D) *Bacillus laterosporus*
    E) *Bacillus alvei*
17. Give two reasons why brood combs should be replaced periodically. (2 points).
18. Explain how a capping scratcher is used for the sampling of Varroa mites within a colony (1 point).
19. What is the best way to control wax moth in active honey bee colonies? (1 point).
20. What stage and sex of the *Varroa* mite survives the winter in a colony that has a broodless period? (2 points)

Please identify the correct bee disease (3 points).

21. ___The infected larva is overgrown with a white cotton-like mycelium which fills the entire brood cell.
22. ___ A bacterial disease that destroys the connective tissues of the thorax, legs, wings and antennae of adult honey bees.
23. ___ In some states colonies are burned when this disease is found.

ANSWERS ON PAGE 646

Mark Winston

People, Who Need People

"The research positions being filled today will affect our industry for years to come. We need a stronger voice in those decisions."

I graduated with my Ph.D. from the University of Kansas in 1978 and began the expected search for a position. My hope was to land a job as either a university professor or a research scientist with the U.S. Department of Agriculture. Then, like now, there were few Ph.D.-level jobs available in pure apiculture, so I applied for positions in related fields such as animal behavior, ecology, behavioral ecology, evolutionary biology, and so on.

At first, I treated the search process as a bit of a lark, since I was confident of landing a job. I decided to demonstrate my disdain for any employer who would reject me by taping what I expected to be a very few incoming rejection letters on my office wall. This turned out to be a bad idea; my spirits sagged as the letters multiplied from a patchwork pattern into solid wallpaper. At one point I counted over 50 rejections staring down at me from all sides. The last straw was a letter from Yale University rejecting me for a job that I had not even applied for! That day, I tore down the notices from my walls, and for the first time began to think that the mythical position I had spent so many years in school training for might never materialize.

I did, of course, eventually get a job, first teaching for a year at Idaho State University and then landing my current faculty position at Simon Fraser University. This job was advertised in the field of "Insect Pest Management," an area I knew nothing about, but the biology department decided that killer bees were close enough to being pests for their purposes, and hired me. I was fortunate that the department encouraged me to build a research program in apiculture at SFU. However, most of my teaching responsibilities were and remain in non-apicultural areas. For example, I teach courses in introductory biology, introductory entomology, pest management, and chemical ecology, all subjects that might involve bees but certainly don't focus on them.

I considered myself an apicultural rebel when I was hired because my doctoral training was not purely in beekeeping. Rather, I was a behavioral ecologist who happened to work with bees. This was unusual for a bee guy in the late 1970s, since most people studying bees came from a more traditional background. However, there were a number of us at the time who used honey bees for more general research in genetics, physiology, behavior, ecology, etc. We thought ourselves to be the new wave in bee academia, and considered the older generation to be outdated and narrow.

It is, of course, ironic that I am writing this column today, because I have become the generation I used to complain about. I now find myself among the few university faculty who still practice the craft of practical bee management research. Indeed, I have become increasingly alarmed at how bee-related jobs have less and less to do with beekeeping. The pendulum in research and academic positions has swung too far away from bee management. We are losing the capability to conduct beekeeping and pollination research that has contributed so much to our industry in previous decades.

Take universities, for instance. It is extraordinarily difficult to get a job as a professor in any field, let alone apiculture. Each advertised position gets hundreds of applications, of which at least 40 or 50 turn out to be viable candidates. Then, the list is narrowed down to four or five individuals who are brought in for interviews, during which the candidate must give one or two seminars and talk one-on-one and in small groups with almost everyone in the department. Then, the department meets to vote on their choice, which must be approved by deans and vice presidents before becoming official.

The problem with these bee jobs is university politics, not candidates. I can think of at least 10 highly qualified, recently graduated individuals who could fill a position involving teaching, extension and/or research responsibilities with honey bees. However, departments and deans can and do take jobs advertised in apiculture and change them around to fill a different mandate. The hidden agenda in contemporary job advertisements is often for a biochemist or molecular biologist, today's trendy, "buzzword" fields.

A typical job-search scenario might begin when the incumbent retires, or when beekeepers convince a university to create a new position in apiculture. The job is advertised, numerous candidates apply, and a few are invited to interview. The short list usually includes some candidates who study beekeeping or pollination management as well as others who happen to work with bees, but whose focus is more academic than practical. Then, departmental opinions may split between those who want

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"The pendulum in research and academic positions has swung too far away from bee management. We are losing the capability to conduct beekeeping and pollination research that has contributed so much to our industry in previous decades."

PEOPLE ... Cont. From Pg. 617

the beekeeping candidate and those who don't give a hoot about beekeeping and want someone in a different field that complements their own research. More often than not, the department picks the academic over the practical researcher, or the dean insists on hiring the academic candidate, and another bee job is lost.

Positions with a significant beekeeping component also are disappearing from the U.S. Department of Agriculture, but for different reasons. For one thing, the federal government is closing bee laboratories. In past years, the Wisconsin and Wyoming laboratories were shut down, and now the Tucson lab is threatened. While some positions are shifted to other laboratories, the net result is a loss in jobs.

USDA bee laboratories also have been used for transfers of non-bee researchers when other government laboratories are closed. What happens is that a USDA lab in some unrelated field is shut down, but senior personnel have to be parked somewhere until their 30 years of employment are completed and pensions kick in. Sometimes, these non-apicultural researchers are moved to bee laboratories to do their remaining time, occupying a position that could be filled by a younger, more bee-friendly person. Some of these transferred scientists have made valuable contributions to bee research, and sometimes their outside perspective has proven highly valuable to the beekeeping industry. Nevertheless, although occasional transfers of this nature are healthy, the frequency with which they have occurred in recent years, and the degree to which they have kept new Ph.D. graduates in apiculture out of jobs, have created a real loss to beekeeping research.

The combination of government downsizing, transfers of non-bee personnel into bee jobs, and university priorities shifting jobs away from traditional apiculture has resulted in an alarming drop in our ability to address contemporary research problems relevant to beekeeping and crop pollination. It also has created a discouraging environment for young researchers today looking for jobs working with bees.

If you are concerned about this trend, as I am, there are things you can do about it, but it's not going to be pretty. Universities and governments don't like being told what to do, even though they may be public institutions funded by your tax dollars. Universities and government laboratories will follow what they perceive as their own self-interest if left to their own devices. Your job is to make sure they feel pain when axing bee jobs and get rewards when maintaining bee positions.

The pain is inflicted through effective lobbying. A dean is low on the totem pole compared to the head of a powerful legislative committee, and the head of a government research branch is a fly on the wall from the perspective of a congressman. If you want to maintain bee research, beekeepers need to find strong legislative allies at state and federal levels, and convince them that votes will come their way if they follow your advice. We have not been effective enough in this area, and that is one reason why bee jobs are disappearing in spite of increasing research needs.

The rewards end is more positive, but also requires an organized effort by beekeepers. There is nothing universities appreciate more than donated money for research, scholarships, buildings, endowed chairs, whatever. Just because you donate doesn't mean your wishes will be followed, however. You need to put appropriate strings on your money to make sure that the recipient hires the type of person you want to see employed.

Try this one out on your local entomology department chair and state legislator: Tell them that the beekeepers in your state will donate $100,000 toward bee research, but insist that government match that donation. Also insist that you have voting representation on the committee struck to disperse the funds, and on any hiring committee that is searching for an individual to study bees. Be careful that the restrictions you put on the money are ironclad; I can think of a few burned beekeeping organizations that thought they were getting a faculty member who would do practical beekeeping research, but ended up with something else entirely.

At a national level, try raising a million dollars for bee research through the Honey Board, then going to government and offering to share some of that pot with USDA bee laboratories if 1) positions at the lab are guaranteed to remain in apiculture, and 2) beekeepers have equal say with researchers in determining how the money gets spent. If the government doesn't want to accept your offer, try a few universities. I know mine would bang down your door for the opportunity to access that level of research funding.

The decisions being made today about jobs will have impact on bee research for the next 20 or 30 years. We need the influence of exciting young scientists trained outside of apiculture, but we also need to maintain a solid core of personnel grounded in traditional bee management. Today, there are too many hirings of researchers from outside the bee area, and too few true apiculturists getting jobs. Pay attention now, or the research infrastructure built by previous generations will soon disappear, replaced by scattered, overworked and underfunded researchers not able to meet the research needs of tomorrow's beekeeping community. BC

Mark Winston is a professor and researcher at Simon Fraser University, Burnaby, B.C. Canada.

Winter Management ... ... Southern Style

Keith Delaplane

From a honey bee's perspective, there are three profound facts of winter: It's cold, there's no forage available, and, as a consequence, they spend more of their time confined in the hive. The cold factor, gladly enough, is less important in the south, but the other two – food shortage and hive confinement – are common to most parts of the country. Thus, some principles of overwintering management are universal.

Nevertheless, winter management differs in the south, and long mild winters have their own special hazards. Much can go wrong in the apiary between November and March when you are preoccupied with Thanksgiving, Christmas, New Years, and Mardi Gras. So let me go over some of the principles and practices of good winter beekeeping, Southern Style.

Ensure good hive locations and air flow. Whether you keep bees in cold or warm places, your bees spend a lot of time inside the hive during winter. Thus, hive interiors must be a dry, healthy environment. Year-round, locate hives on high ground with a windbreak and lots of sun. Lean hives forward a little so rain or condensate water runs out the front instead of pooling inside. If you use both inner and outer covers, put a small block of wood on the rim of the inner cover to prop up the outer cover a little. This lets warm, moist air from the clustering bees escape out the top. If you don't provide an upper vent for moist air, water condenses on the lid and walls, creating an unhealthy humid atmosphere. High hive humidity encourages chalkbrood disease; the most apparent sign is gray/white mummies at the hive entrance.

In areas with cold winters, mice often seek warmth in overwintering beehives. Thanks to our mild winters, this is not a serious a problem in the south, but it can still happen. If mice are a problem, reduce hive entrances with a strip of chew-proof metal or hardware cloth. Even without mice, it's a good idea to reduce entrances by about half to prevent cold drafts.

Ensure adequate food supply. In the deep south, red maple nectar flows can begin as early as January. From February to March there follows a rapid succession of flows from spring titi, dandelion, tupelo, and canola. These flows are unpredictable and can have unexpected consequences. For example, an early January nectar and pollen flow can stimulate bees to rear brood and rapidly consume surplus food stores. If subsequent flows are poor, bees may face a starvation situation unless you step in with sugar syrup. Thus, watch carefully for early spring starvation. Late summer is usually a nectar dearth, so southern beekeepers often feed in summer or fall to give bees an adequate winter food supply. By November, each hive should have 60-100 pounds of honey or syrup to get it through to early spring flows. Hives with two heavy hive bodies should overwinter well; if you use only one hive body, give it at least one good medium super of honey or syrup.

Control mites. Vegetable oil extender patty and menthol treatments for tracheal mites seem to be most effective in spring. However, if you have colony mite levels above 25 percent, a November treatment is probably warranted. Fall tracheal mite treatments do not have strong support from research, but at least one study found reduced springtime mite levels following autumn vegetable oil extender patty applications.

In the south, January to March is the best time to treat for tracheal mites. For this area, the idea that menthol only works at temperatures above 60° requires rethinking. First of all, the 60° limitation applies to temperatures at the site of the menthol packet, not necessarily ambient temperatures. It is not unusual for internal hive temperatures to exceed 60° on sunny days in winter or early spring. Under these conditions, menthol can give many hours of activity each day. This probably explains the excellent results I've had with menthol in February in north Georgia.

Varroa mites are the most visible and dramatic killer of honey bees today. The only registered control in the U.S. is Apistan®. In a study with my colleague Dr. Mike Hood at Clemson University, we found that August treatments in the piedmont of South Carolina and Georgia were far superior to treatments in June or October. The question remains about additional treatments in spring. Many beekeepers, especially in Florida and other southern-most regions, treat at least twice – once in early spring and again in summer. Since brood rearing in these areas is more-or-less continuous, *Varroa* mite reproduction is more-or-less continuous. In the absence of research, we must rely heavily on this bee-

Continued on Next Page

Lean hives forward slightly so rain and condensate water drains out the front.

WINTER MANAGEMENT ... Cont. From Pg. 619

keeper experience. I am still clinging to the hope that we can adequately control *Varroa* with one well-timed annual treatment. But realistically, if southern beekeepers have measurable *Varroa* mite levels in February or March a treatment is probably warranted.

Control diseases. The period between November and March is a good time in the south to feed the antibiotic Terramycin®. A treatment in September-November and another in February-March, given in powdered sugar, syrup, or in vegetable oil extender patties helps prevent American foulbrood and European foulbrood, and probably controls some secondary mite-borne diseases. Don't dust open cells of brood with the antibiotic mixture, and never feed Terramycin® within four weeks of a marketable nectar flow. Surplus flows can occur as early as March in southern Georgia and Florida; thus, Terramycin® treatments here must be finished by the end of January.

Nosema is comparatively rare in much of the south. In bee samples I receive from Georgia beekeepers, I rarely find the disease. Nevertheless the disease is present and sometimes flares up. The biggest symptom is slow spring buildup. If you suspect Nosema, send a bee sample in alcohol to your state apiarist for diagnosis. If the bees are positive, treat the colony with Fumidil B® in syrup. Spring and Fall treatments are recommended. Commercial queen breeders in the south sometimes find black queen cell virus – a disease in which queen larvae die in their cells and melt into a black mass. This virus is closely associated with Nosema. Thus, breeders with black queen cell virus should probably treat grafting mother colonies and cell-builder colonies with Fumidil B®.

Plan for early nectar flows. In most of the south, April and May are the key months for honey production. That means all the normal springtime tasks – medicating, treating for mites, equalizing, requeening, splitting, supering – are very early. Every year some southern beekeepers miss out on the honey flow because they are too late with their spring management.

Stimulative feeding can begin as early as January, but it must be done cautiously and diligently to prevent over-stimulation and starvation. Equalizing – that is, moving frames of bees and brood from stronger to weaker hives – is a February-May practice. Medicating and mite treatments are a good idea in January or February. Queens and package bees are usually not available until the first week of April. Once queens are available, southern beekeepers work like crazy to make splits and requeen. Bearing in mind that surplus flows begin in April, beekeepers must make their splits very strong because there's so little time to build up. Package colonies, likewise, must be supplemented with bees and emerging brood from other colonies if they will have a chance to make surplus honey.

Swarming is a key problem in April and May. Splitting, equalizing, and supering are the solutions to this problem, but again, splits must be made very strong. Because of the

Prop up the outer cover slightly to let warm, moist air vent out the top.

Grease patties made of two parts sugar and one part vegetable cooking oil help protect bees from tracheal mites.

time constraints, it's not unusual to make splits from more than one colony. For example, by taking three frames of bees and brood from each of three colonies, a beekeeper can make a nine-frame split of equal or greater strength than any of the parents. With a new queen, such a split is a great honey producer.

Take advantage of the quiet time. But let's face it. Fall and early Winter isn't a quiet time in southern beekeeping. This is the time to clean out dead colonies, install new foundation, paint supers in the workshop, sell honey, and go to beekeeper's meetings. January is the marathon month for national association meetings. Do yourself a favor and attend one this year. Reserve queens and packages now to avoid the spring rush. Teach beekeeping at your local 4-H club or public schools. Read bee books, read bee magazines, and watch bee videos.

Reflect on all the pleasures your bees have brought you, and plan now to make next Spring your best season yet. BC

Keith Delaplane is the Beekeeping Extension Specialist from Georgia and a popular author in the beekeeping press.

FALL & WINTER MANAGEMENT IN CENTRAL FLORIDA

We begin Fall management at the end of the Summer honey flow.

Dean Breaux

We go to the bee yards at the conclusion of the Summer honey flows, around the middle to the end of August. We weigh each hive, record the weight, remove the surplus honey and then perform a colony evaluation on each hive. The hives are then moved from their Summer black mangrove and cabbage palm locations to Fall yards. Once the hives are relocated to their Fall yards, the now-empty supers are replaced. The predominant Fall forage plants are Brazilian pepper and goldenrod. In most years these Fall forages yield a surplus honey crop as well as Winter stores. The Fall flows provide a stimulus for brood rearing which helps facilitate requeening, and reduces Winter mortality.

Maples, especially red maple, are good, early nectar and pollen sources.

Contrary to popular belief, we do experience Winter mortality in the South. While we don't lose as many colonies, we will have some with populations under five frames of bees during Winter if they are not properly managed. When populations drop below five frames in the winter, the hive will in all likelihood produce a meager crop in the Spring, this being due to their inability to expand early in the year. To ensure maximum production in the Spring and the best chance of overwintering the colonies, they must have young, vigorous queens in them. We start our requeening in September and finish in October on the late Fall flows. To accomplish the requeening of our colonies we use queen cells for the most part and only use mated queens for the colonies that were unsuccessful with the use of a cell.

We practice Fall requeening for a of reasons. Our Spring flows occur so early in the year – maple in January, willow in February and orange blossom the end of February to the beginning of March – that the bees do not have a chance to utilize a queen raised in March. The queens are easy to raise in the early Fall – no cold fronts, bad weather, lack of drones, poor pollen, etc. The type of bees that we run, which are predominantly Starline, do not readily shut down during the Fall or Winter. And, as we have an abundance of pollen and nectar coming in, the bees continue to raise brood. By requeening with cells, we also interrupt the brood cycle of our hives, which allows us to be more effective in treating for mites. Other reasons for requeening in the Fall are that we are busy raising queens for everyone who needs them in March, April and May and have little time for anything else. Also, all of the hybrids that we raise require that we replace the drone mothers in anticipation of next year's queens.

Our procedure for Fall management is as follows: After we have removed all surplus honey, we do a hive inspection and evaluation. We look for brood disease and any evidence of mite damage along with evaluation of the temper of the hives, etc. Most of our hives are fulfilling dual purposes: first as a production hive, and second for the evaluation and storage of different lines of stock required for the production of the Starline, Midnight and Yugo stock. Because of this, we harvest any desirable queens, cage them, and bring them to our breeder yards. All other queens are destroyed. After we have removed the old queens from the colonies, we install our Apistan strips, queen cells and medicated grease patties. We do all of this with one trip to the hives.

A variation of this technique that

we use on our production hives is to not kill the old queen but to put a cell in the hive with a cell protector. We get variable results at requeening with this method. We have experienced as high as 90 percent requeening and as low as 30 percent. It is faster, as you don't need to find the old queen, and our average rate of success is around 80 percent. When using this method, it appears that leaving the honey supers on the hives and removing the queen excluder, then placing the cell protector and queen cell up in the supers gives better results.

We then return in three weeks to check and see that there are mated queens in the hives. We always carry young mated queens with us on this hive inspection. When we find a hive that is queenless, or a hive in which the old queen has survived, we install a young mated queen in a cage. We also give another grease patty to all the hives that need it.

By the middle of November we have requeened all the colonies that will be requeened. The operation is down to a deep brood box with a minimum of one 6-5/8" super of stores above a queen excluder. Then the hives are equipped with entrance reducers.

"By the middle of November, we have requeened our operation."

From the first of December to the end of January, we move hives from our Fall locations to our Spring locations (primarily citrus) to prepare for the Spring flows. Whenever possible we try to locate our hives in areas that have red maple around as it blooms in late December thru January and provides pollen for the bees to start building on in preparation for the early citrus flow at the beginning of March.

We begin to visit our yards the first of February and evaluate them on a yard basis. If the weather has been mild and the bees have been able to fly, we will need to place additional supers on the hives to accommodate the exploding populations of bees raised during the red maple (*Acer rubrum*) and Carolina willow (*Salix caroliniana*) bloom. In some years the bees will even make a surplus on one of these flows. If the weather is like it was this year (Spring 1996), we have to begin feeding with a light syrup the first of February to ensure that the hives don't starve and to provide a stimulus to the queens. The feed we use is high fructose corn syrup and Fumidil B®, cut with water. This feeding will ensure that the queens are laying well and reduce any nosema infections. The main reason for feeding is to prevent hives from dwindling from lack of resources. It is rare that the hives have a lack of pollen but oftentimes they will be short on stores due to their prolific nature. This feeding will ensure a strong population of young bees in March for the early citrus flows.

We add supers to colonies in late February or early March in preparation for the citrus flows. We also make up any losses that we have had over the Winter by making splits when we add supers to our hives.

I hope this brief description on how we manage our bees is helpful to other beekeepers. I repeat, it is very important to have young, vigorous queens in those hives going into Winter with large populations of young bees. These management practices are not cast in stone by any means, but they are sound in our scheme of colony management. There is no management strategy that is foolproof; all will need some adjustment to your area, the type of Spring flows that you encounter, the type of stock you run, and the condition of your bees. Use common sense and remember what Pooh Bear says: "You never can tell about those bees." BC

When in bloom, cabbage palms are spectacular, and a good source of honey.

Citrus, usually orange, can be a gold mine –when the weather cooperates.

Dean Breaux operates Hybri-Bees, producers of Starline, Midnight and Yugo breeder and production queens in Dade City, FL. He also operates St. Ambrose Apiaries, selling production queens.

A SIMPLE HONEY HEATER

Walt Dahlgrew

Any article written about extracted honey will mention heating the honey. This may be required to liquefy granulated honey or to make the honey flow better for straining or bottling. Few printed articles are available for a small, convenient honey heater, so I decided to put one together to suit my needs.

The honey heater should satisfy the following requirements:

1. It should be easy to lift the honey pail into and out of the heating chamber – 60 pound pails are heavy and awkward to lift into an oven.

2. It should be heated by electricity – gas and oil require sophisticated burners and controls.

3. It should be small for convenient storage when not in use – like most hobbyists I don't have the luxury of extra space.

4. It should be lightweight for moving – I can't store it where I use it, nor use it where I store it.

5. It should use readily available materials for construction – the thermostat was the hardest thing to find until I decided to use a thermostat from an electric water heater. It was a shelf item in a lumber store.

The most convenient way to move a 60-pound pail of honey is to pick the pail up by the handle, carry the pail to the required location and set it down. Therefore, I decided to set the honey pail on the heater and then place an enclosure over both to create a heated chamber.

You have probably already looked at the drawing illustrating the components and construction. Simple, isn't it? A wood base holds the light bulb heaters, the pail support bracket and the electric outlet. The removable cover contains an electrical thermostat and the cord which plugs into the base outlet. A dial-type cooking thermometer poked through the upper part of the heat chamber shows the inside temperature to aid in adjusting the thermostat.

Construct the base by cutting the wood to size, and fasten it (or) the components together with nails or

Constructed heater, showing box in back, wrapped in tape, stand in front, with bulbs in place, and outlet.

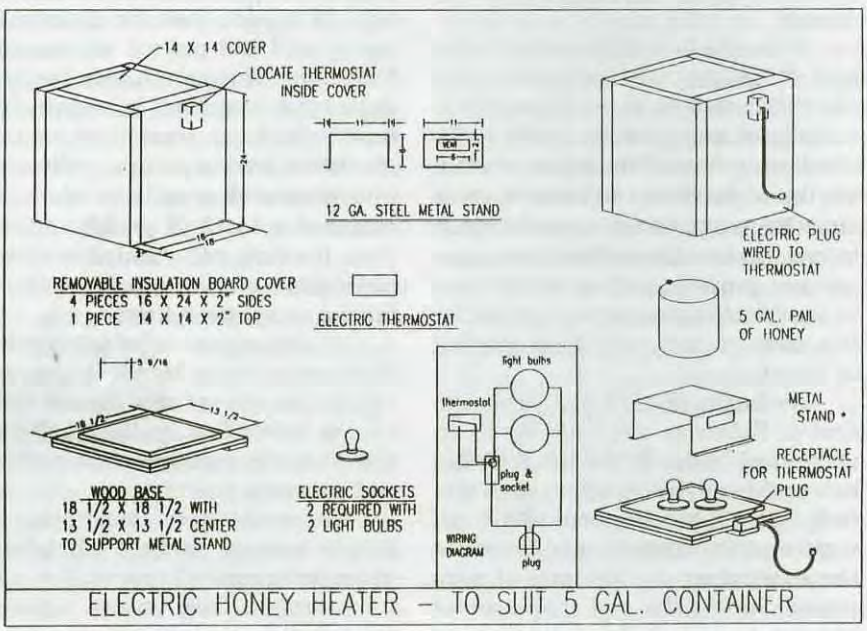
screws. Wire the lamp sockets, outlet and cord per the wiring diagram and screw to the base. Position the support bracket (made at a local sheet metal or welding shop) and screw to the base.

The removable cover is made by cutting the pieces to size and pinning them together. I made 12 pins about four inches long from wire coat hangers and pinned the insulation pieces together. Next I positioned the thermostat inside the chamber near the top and ran the wire through the side to the bottom of the cover and attached the plug. I put 1/2"x 1/2" plastic corner protectors (which I found at the lumber store) at each corner and wrapped nylon-reinforced wrapping tape around the cover at the top, center and bottom. This holds the sides together and secures the electric cord from the thermostat.

The heater is now ready for calibration. Install two 75-watt light bulbs, set on the removable cover and plug the thermostat cord into the outlet in the base. Plug the cord into your 110-volt outlet and the lights should come on. Adjust the thermostat to turn the light out at 125° to 130°F

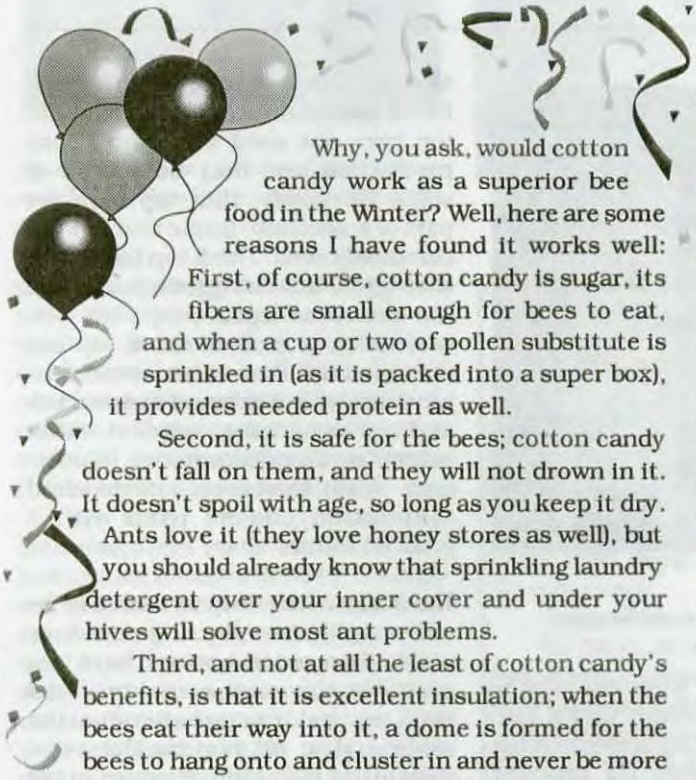
You are now ready to liquefy that five-gallon pail of honey while you thumb through the magazines to find another piece of equipment to make. BC

Walt Dahlgrew is a small-scale beekeeper from Jamestown, NY.



COTTON CANDY FEEDING

Steve Tuttle



Why, you ask, would cotton candy work as a superior bee food in the Winter? Well, here are some reasons I have found it works well: First, of course, cotton candy is sugar, its fibers are small enough for bees to eat, and when a cup or two of pollen substitute is sprinkled in (as it is packed into a super box), it provides needed protein as well.

Second, it is safe for the bees; cotton candy doesn't fall on them, and they will not drown in it. It doesn't spoil with age, so long as you keep it dry. Ants love it (they love honey stores as well), but you should already know that sprinkling laundry detergent over your inner cover and under your hives will solve most ant problems.

Third, and not at all the least of cotton candy's benefits, is that it is excellent insulation; when the bees eat their way into it, a dome is formed for the bees to hang onto and cluster in and never be more than a foothold away from food. While I'm mentioning insulation, all beekeepers should know that a layer of household aluminum foil contact-cemented to the inside of a hive gives an increase in R factor of four (4). A wooden hive body has an R factor of only 0.4, so with a little aluminum foil you will increase your hive's R factor to 4.4. You will also decrease insect infestation and wind chill from wood cracks, and it works as well in hot climates to reflect external heat to keep a hive cool as in cold climates to keep the hive warm.

The fourth advantage to using cotton candy for food is that it is dry. While moisture from the cluster condenses on the fibers and dissolves them, forming little droplets of sugar water which are quickly sucked up by the closest bee, they do not condense on the upper cover supporting disease.

Fifth, cotton candy is cheaper than making other candies. Like us, you probably made the taffy and pollen substitute mixture which takes a $250 copper kettle, a hot plate and a lot of time. Then we'd burn whole batches of caramel in spite of our best efforts. Cotton candy never burns, is always good, and a machine can be purchased (used) for around the same price as the copper kettle alone, or you can rent one in the off-season from a carnival supply house for the price of a single batch of burnt caramel.

So how do you go about doing all this? Just purchase the same kind of sugar you normally use, find a supplier for rent or sale of a cotton-candy machine and let them tell you how to use it. Clean and repair your hive bodies and one or two frames with only a small strip of foundation at the top. The frames will allow the bees to build on the foundation if you don't get to them early enough in the Spring and help the cotton candy to stay in place without forming a barrier dividing the cluster of bees.

This is a good time to spray some contact cement (3M 90) on the inside of your box to apply a layer of aluminum foil with the shiny side to the inside and the dull side to the glue.

Next, place the two frames with one inch of foundation in the hive body, put on the inner cover, and turn the whole thing upside down. Turn on the cotton candy machine and start filling the hive body with spun sugar; with every layer, sprinkle in some pollen mixed with two-thirds pollen substitute until it stops sinking into the cotton candy. Put on another layer and continue until full. You may want to place a sheet of waxed butcher paper over the full box and start on another in the same way. Remember to take the waxed paper off when you place it over the hive in the Fall. Your equipment can be used for feeding at any time of the year, on queen cell builders, nucs and even to make the candy to seal queens into queen cages. BC

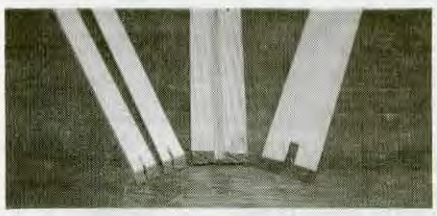
Steve Tuttle is a commercial beekeeper from Woodland, Washington.

FRAMES. Build Them Right. Build Them Fast.

James E. Tew

The public frequently refers to them as "racks", but we know them as frames. They are the wooden structures in which honey bees build comb thereby making a piece of comb rigid enough to handle without fear of it breaking. Sounds simple enough. I mean how complicated could it be to put four pieces of wood together? In fact, it would not be very difficult if there were only one style of frame requiring one way of assembly. You know that is not the case. Frames come in different sizes and styles - all requiring their own little quirks of assembly.

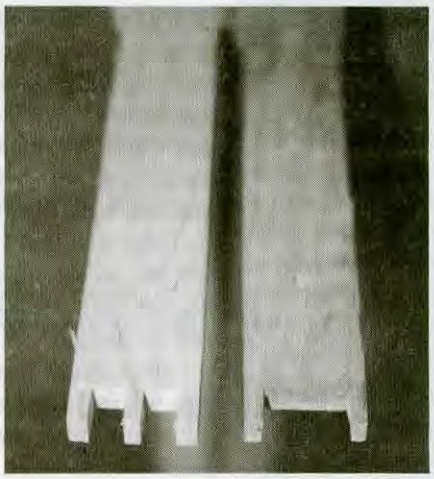
Early frames were simple rectangular casings. The very earliest frames were nothing more than top bars with wavy pieces of comb attached which would break off very easily. It was a short step to add a stub on each end (later named end bars) and then finally, a bottom bar to add rigidity to the whole contraption. From that point, every conceivable shape and style seemingly has been tried. Of that total number, only a few have survived and they are available from bee supply consortiums today.



Popular Bottom Bar Styles: L-R: 2 piece, grooved, solid.

Up until about twenty years ago when plastic frames made their debut, one thing all frames had in common was that they were made of wood. Plastic frames are common now, but they have not quite replaced wood in popularity.

Though I have seen foundation and artificial comb made from aluminum, I don't recall ever having seen frames made from any type of metal. Aluminum comb was a failure because wintering bees could not keep it warm. From its exposed edges, aluminum comb drew coldness into the cluster area. No metal frames have been tried of which I am aware. If any readers should know of such an experiment, please let me know the particulars.

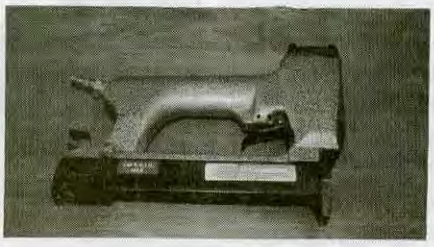


Two most common end bar styles.

FRAME COMPONENTS

The Top Bar The top bar can be either thick (3/4") or thin (3/8"). All manufactured top bars are 18-7/8" to 19" long and are 1-1/16" wide. Though still usable, the variation in length is just enough to cause a bit of confusion if equipment from different manufacturers is mixed. Thin top bars are used for comb honey production and may be slotted or solid. Obviously, thin top bars are part of a specialty frame and are not commonly seen. Thick top bars, with a wedge for attaching foundation, are the ones most commonly seen. Occasionally, a grooved thick top bar may turn up. These are used in conjunction with a grooved bottom bar and are intended to support either plastic or plastic-centered foundation. Also, hookless, crimp-wired foundation can be used with a grooved frame.

Typical compressed air staple gun. Many styles, and prices are available. Look for lubrication, weight, and other uses.

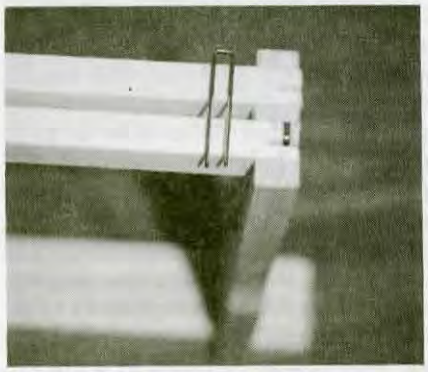


The Bottom Bar Bottom bars can be either split, two-piece, grooved, or solid. Two-piece bottom bars are probably the most common, but I can't say that it's any better than the other styles. All require the same amount of fastening. Be sure to get the appropriate foundation for the type of bottom bar that is to be used.

The End Bar Except for length and cuts required to accept the bottom bar, the end bar is dimensionally standard. Nearly all end bars are 3/8" thick and are scalloped half their length on both edges to allow bee movement between frames. On some, one of the unscalloped edges is tapered to a narrow edge. In the correct position within the hive, the narrow, tapered edge on one end bar should adjoin the broad, flat edge of its neighboring end bar. This serves to decrease frames being strongly stuck together with propolis.

ASSEMBLING A FRAME

Okay. What are we talking about here? Are we talking about putting ten frames together or five hundred? If only a few frames need assembling, clear off a spot in the garage and have at it. On the other hand, if a large number of frames will need assembling or if this will be an on-going



Typical staple used is 1-1/8 to 1-1/4 inches long, with 3/16-1/4 inch crown (top), made of 18-gauge wire.

Even with staples glue is necessary.

Drive 2 staples from the top down into the end bar.

process, arrange for a designated spot, get empty supers together to organize assembled frames, have a comfortable stool, and have all the necessary parts within easy reach. A radio to help time pass is really a nice addition. Anything beyond ten frames can become mind-numbing.

For many years, bee supply manufacturers made end bars that had one set of edges beveled. Though end bars are not commonly made any more with the chamfered edges, it would not be unusual to come across some end bars needing assembly or repair. Here is my rule of thumb. Put your left thumb either in or on the wedge in the top bar. Put your right thumb on the chamfered bevel on the end bar and then force the end bar onto the top bar. The cuts in the top bar intended to receive the end bar are obvious. Rotate the top bar and again, with you right thumb on the chamfered bevel, put the other end bar on the top bar. In this manner, end bar edge bevels will be on opposite sides of the top bar.

Before we go any farther, lets talk about glue. It helps greatly if the end bars are glued to the top bars using yellow carpenter's glue. Though it has not been discussed yet, gluing bottom bars to the end bars is also a great idea - and doesn't take but a minute. Most beekeepers don't do glue, but it really helps. Another point for consideration is that we are only putting this frame together one time. So gluing or cross nailing is fine with me. If a frame is put together correctly the first time and is used properly, it will last indefinitely. Many times beekeepers don't want to construct a frame in such a way that it cannot be repaired in future years. I suspect that the usable life of most frames is about seven years. I would rather just replace the injured frame than try to cobble up a repair job. Now back to the assembly job.....

With both end bars stuck to the top bar, glue oozing out, drive two 1-1/4" nails (18 gauge) through the top bar into the end bar. Proper nails are normally included in the deal when buying frames. If they're not, and that happens sometimes, be sure you get both the right length *and* gauge. Too-thick nails will split frame wood and you'll end up with so much kindling.

Occasionally, some species of pine may be used that is difficult to drive nails through. It will add more time to the assembly process, but clip the head off one of the frame nails and use it as a drill bit to bore pilot holes. Pilot holes also help people who are not schooled in advanced hammering. Use a light hammer with something like a six ounce head. Tack hammers are too light while common nail hammers having 12, 16 or 20 ounce heads are too heavy.

After hammering two nails through the top bar into each end bar, flip the frame over, dab glue in the end bar slots and install the bottom bar – again probably a two piece bottom bar. Using four one-inch nails, secure the bottom bars to the end bars.

Now here's a tricky – but worthwhile – part. If you haven't already done so, break out the wedge. Stand the frame on end and drive a 1-1/4"

Continued on Next Page

Stapler Economics

Using the figures from this article, here is a breakdown of the costs involved.

To purchase a compressor and staple gun, new, will cost between $300 - $500, depending on size, quality and service.

To assemble 1,000 frames:

By hand, at an average of 2.5 min./frame – about 40 hours (about 200/day in an eight-hour day). Labor, at $6.00/hr. (with nothing additional for benefits) equals $240.00, or $0.24/frame, for a good assembler.

By machine, at an average of one min./frame – about 16 hours (about 500/day in an eight-hour day). Labor at the same rate equals $96, or about $0.10/frame, for a good assembler.

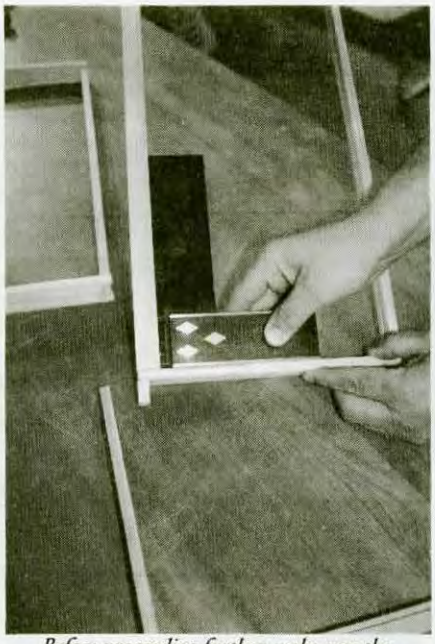
The difference comes to a net savings of $144.00/1,000 frames in labor costs (not to mention employee sanity). Thus, assembling 2500-3000 frames (250-300 supers worth) will pay for the compressor and stapler in labor savings alone. Add to this the labor saved when assembling those supers, and the advantages are obvious. (And that's just this year!) Staple and nail costs are roughly equal, and frames rendered unusable are about equal. Stapled, and hammered thumbs were not measured.

Of course these figures vary (and we tried to err on the high side) as to skill of assembler and other factors, but the benefits of mechanization when expanding are obvious, even if you aren't paying someone to assemble frames. *Your* time has just as much value.

Put a single staple through the end bar, horizontally into the top bar.

For two piece bottom bars, use one staple for each.

nail through the end bar into the 3/4" part of the top bar. Then flip the frame around and drive one into the opposite end of the top bar. Several things can go wrong here and they all involve the nail coming out in the wrong place. If the nail is not properly aligned, it will break through on either side of the top bar. Another problem occurs when the nail strikes the nail that was driven through the top bar again causing the side nail to split out in the wrong place. I don't know a good way around this problem. However, if all nails go where



Before proceeding further, make sure the frame is square.

they should, the cross-nailing and gluing makes a stout joint.

At this point, everything should be glued, nailed and cross-nailed. Before the glue has an opportunity to set, rack (or torque) the frame into square. I would guess that about one third of frames assembled correctly are still out of square. Assuming nothing goes wrong, it will take about two-three minutes to assemble one frame. If hundreds or even thousands of frames are to be assembled, this job can become stupefying. At this point, many beekeepers consider pneumatic air guns to speed things along.

Pneumatic Equipment – The Good and The Bad

Pneumatic staplers are reported to be four to five times faster than hand nailing and due to various adhesive materials coating the fasteners, pneumatic fasteners should provide considerably more holding power. In reality, when assembling frames, I have personally found air staplers to be about 2-1/2 times as fast as hand nailing. An added benefit is that I don't tire as quickly when using a stapler so I can put frames together longer. For frames, beekeepers generally use a staple having a crown of 3/16" - 1/4" and a leg length of 1-1/8" - 1-1/4" The staples are made from 18 gauge wire.

Probably a bit more exciting, but still necessary, a staple should be driven through the end bar into the top bar as was described above during the hand nailing procedure. Though much faster, stapling frames can approach sloppiness. Be prepared for the occasional wild staple leg to explode out of the top bar. Such staples are nigh impossible to pull back out. A pair of nippers can be used to clip the exposed leg and then tap flat with the hammer.

Except for an occasional errant staple leg, the pneumatic stapler sounds like the correct path to take toward assembly efficiency, but as one would expect, there is a catch. There must be a forced air supply in order for the stapler to operate. An air compressor capable of producing around 100 - 120 pounds per square inch will provide enough air for one stapler. Such a compressor costs about $200 - $300. The stapler will cost about $90 - $300 depending on features. The biggest difference between the economical staplers and the more pricey ones is oil. Cheaper machines require oiling while the more expensive machines do not require lubrication. Electric staplers do not have legs long enough for frame assembly so they are not an option.

There it is. For most beekeepers, it's too expensive to buy air equipment for staple gun use only. There has to be other justification for the air equipment. Spray painting, pressure washing, and tire maintenance, are three other common uses for an otherwise expensive piece of air compression equipment.

Is there an easy way around the cost? Not really. Years ago, I bought a "Spotnailer" staple gun that drove a 1 ½" staple with a ½" crown. I used it to assemble both hive bodies and

You'll need to 'angle-in' the staple when attaching the wedge bar, so it doesn't come out of the top.

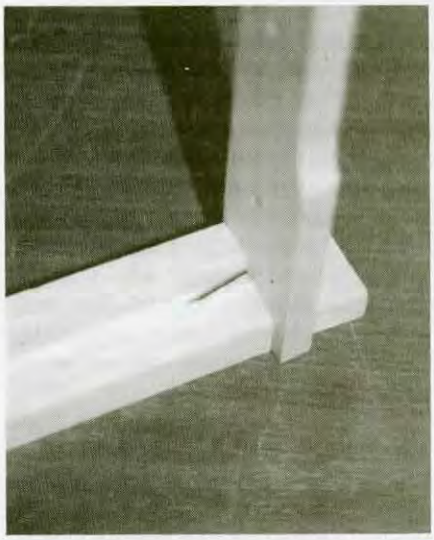
A finishing touch is fastening the two-piece bottom bar and foundation sheet snuggly.

frames. Rather than driving two ¼" crown staples with 1 ¼" legs, I drove a single ½" crown staple having a two inch leg. The bee equipment lasted about eight years before the staples needed to be tightened back up. It was difficult at first to learn just where to place the big stapler in order to hit the narrow end bar, but we did learn rather quickly and we were able to get double use from the stapler. However, without some kind of a cross nail through the end bar, the big staple did loosen up after a few years, but it was easy to repair.

What about a pneumatic brad driver? Are two 1-1/4" brads enough to hold a frame together? Yes they are, if glue is also used and if a cross brad is driven. But two brads cannot compete with two staples of the same length for strength and support. However, I think that a brad driver would be a better choice for the cross nail, but I am not prepared to suggest that one buy a compressor, a stapler, and a brad driver. But if the equipment can be justified for any other reasons, it really makes frame assembly faster and produces frames having stronger joints.

Frame assembly, either by hand or using pneumatics, gets to be monotonous. The same things are done over and over and over again. Several years ago, with the radio going, and me stapling frames by rote - tired and bored brainless, I casually completed yet another frame and tossed it toward my pile of frames. I recall being taken aback that the frame seemed stuck to my thumb. I instantaneously tossed the frame again thinking that it had a bit of pine pitch on it and was sticking to my hand.

Things that can go wrong – the staple from the top bar misses the end bar. If your thumb is in the vicinity life gets interesting, and usually painful.



Things that can go wrong – the staple going through the end bar horizontally misses.

Using a larger staple, with a wider crown can reduce staples, but also reduces holding 'legs.'

This was a curious situation. As though lightening had struck me, I realized that one of the cross staple legs had come out of the top bar and had neatly run just beneath the skin of my left thumb. As I realized that I had stapled my thumb to the frame, the pain hit. To this point, only a fraction of a second had passed but it seemed like an hour before I could pull that staple from my thumb. Suddenly, I was not bored nor was I tired, nor was I short of words. It hurt.

Pneumatic staplers are great for assembling bee equipment, but it's costly and can potentially hurt you. But then again, so can a hammer. One way or the other, you've got to put frames together. BC

James E. Tew is State Specialist in Apiculture, The Ohio State University at Wooster, Ohio.

LET ALONE BEEKEEPING

Richard Bonney

"The idea has been with us for a long time, though not always recognized as a technique."

Beekeeping has never been easy. As far back as we go in the literature we read about problems, and certainly each of us has had our share over the years. Although our problems may have seemed overwhelming, for the most part we have coped. We despair perhaps, sometimes alone in our misery, sometimes together with other beekeepers, but we usually find an answer.

Several years ago I attended a meeting at which a well known beekeeper spoke on some aspect of hive management. I don't remember his specific topic but it was interesting and led off into a variety of questions afterward. The questions began to take on a similar tone to the effect - "I've done all of the recommended actions, why are my bees not thriving?" Individual questioners would then enumerate a list of often lengthy and sometimes conflicting actions taken.

The speaker's basic response was - "You are over-managing your bees. Let them alone and they will do better."

The audience's response to this simple statement was enthusiastic, both right then and later in the hallways as they discussed this "new" idea – "let-alone" beekeeping.

Of course, the idea of let-alone beekeeping has been with us for a long time, though not always called that or even recognized as a technique. In a sense it is the way bees were kept from earliest times. But for each era, let-alone has meant something different, but always in the context of the times. In the early days equipment and knowledge defined the limits of hive management. Before the advent of moveable frame hives, and before there was a reasonable understanding of bee activities, behavior, and biology, management possibilities were limited. But each generation of beekeepers added to the general store of knowledge and equipment slowly evolved.

As modern beekeepers, we know the problems of keeping bees today – disease, pesticides, urbanization, the changing face of agriculture, the overall effects on the industry of reduced budgets. And now, of course, we have the mites. For some beekeepers, the cumulative effects of all this have been too much. Our numbers have been reduced significantly in the past few years.

As the problems of the day compound, the idea of let-alone is inviting. It keeps popping up – sometimes in meetings as described above, sometimes in a casual conversation, sometimes as a revelation in the middle of a sleepless night.

Unfortunately, let-alone beekeeping is too often taken up without a proper understanding of the concept and a foundation of beekeeping knowledge, acquired only through experience and thought. Given that, what do we mean by let-alone? Since it is a concept and not a carefully defined method, it can mean several things, but basically it means that you minimize the number of inspections of your hives over the course of the season. Carried to an extreme, let-alone means go to the hive but twice a year, once in the spring to put on supers, and once in the fall to remove the supers. Otherwise, let the bees take care of themselves. Unfortunately, this definition has been accepted and followed by some. However, in today's beekeeping environment it can lead only to failure. A better definition of let-alone says that you go to the hive only as often as necessary while properly managing your bees. Lots of latitude in this latter definition.

Is the concept of let-alone beekeeping supportable today? Yes. I believe the concept is supportable. However, a very small number of visits to the hive is not. Certainly in the past there were beekeepers who visited their hives but twice a year – in some years. But those hives tended to swarm, to supersede their queens, be susceptible to disease, and frequently to die off in winter. And that was before we had mites to compound our problems.

Of course, in the distant past swarming was expected and encouraged. It was the way to make increase and to replace winter losses. Backyard beekeepers in the early days did not expect a huge surplus from their bees, nor did most of them know

much about the bees. But times have changed. For one thing, we know a lot about our bees today. Beyond that, we and the bees live in a different world, one that is more stressful for both the bees and the beekeeper.

Let's look a little more closely at the idea of let-alone beekeeping. What do we really mean? It starts with the assumption that bees are wild animals that can survive on their own. We, as beekeepers, have not domesticated them but are keeping them on their own terms. If they don't like the way we house them and keep them, they will abscond. Recognizing this, we carry our thinking a step further. If they can survive on their own in the wild, then in theory at least, they can survive on their own in our hives. So let them alone.

Where does this all break down? First in realizing that bees don't always do well on their own. If you monitor a feral colony living in a hollow tree or in the wall of a house for a period of years, you will find that those bees do not survive indefinitely. They live for varying numbers of years, sometimes one or a few, sometimes for many, then the colony dies – from disease, from starvation, from severe weather, and more recently, from mites. If the vacated nest is desirable it does not stay vacant long. It will be taken over by a new swarm. Nearby people who are more or less aware of the existence of this feral colony may not realize that the nest was empty for a while. There is the assumption that the colony has been there forever.

The same thing happens with a beekeeper's colony. If it receives minimal attention it will not thrive. There are too many pressures on our bees today. Because of mites we may be reaching a point where any newly established colony may not be able to survive for more than a year or two without intervention.

Because we must use more stringent management techniques in order to keep our colonies thriving, the casual approach to bees is fast disappearing. Sometimes this is through the deliberate action of the beekeeper. Hive management is refined and tightened. Other times it disappears because the discouraged beekeeper (or beehaver) leaves the ranks. By necessity, beekeepers are becoming better informed and are taking current problems more seriously. As a side issue, fewer but better informed beekeepers may have the long term result of fewer swarms going out to replenish the feral population.

"Let-alone is a concept, not a carefully defined method, and can mean several things."

The source of the feral population is something usually taken for granted. It just exists. The public, and even some beekeepers do not realize that ultimately it is the beekeepers who are responsible for the existence of feral bees. Few non-beekeepers realize that honey bees are not native to this continent. The bees are here by virtue of human intervention, first imported in the 1600's. Every feral colony that exists today can be traced back ultimately to a beekeeper's colony that swarmed, even though that original swarm may have gone out generations ago.

So, what do we do if we want to practice let-alone beekeeping? First, let's go back to a definition I suggested earlier – go to the hive only as often as necessary to properly manage your bees. This is in contrast to some advice that I have both heard and seen recommended in print – go to the hive once a week, or maybe every two weeks, strip it down and look at every frame in the brood chambers, find the queen, look for queen cells, scrape, clean, and generally disrupt the hive utterly and completely. The latter few words aren't part of the advice as given but that certainly is the effect of such an inspection, and any colony so treated is in constant turmoil.

A better approach is to have a plan. First, work out a list of seasonal activities. Start with the obvious – late winter feeding and stimulation (as needed), medication, spring cleaning, supering, swarm control measures, mid-season health check, and so on, right through to the end of the season. Even if you don't take another step beyond making this preliminary list, you have taken a grand step towards making your hive management more efficient. But now take another step.

List all of these actions in the order they most likely will occur. Some of the actions will be repeated twice or more during the season. Associate approximate dates with each item. Look carefully and critically at your list. Which actions can logically be combined into one visit. Which actions or visits might even be eliminated. Now make that list into an actual schedule, with dates. Don't set these dates too firmly, though. Be prepared to vary them if the weather or other commitments so demand. But choose the dates with the thought that such variance might be necessary. In all of this, work towards minimizing the number of inspections while getting everything done and work towards efficiency. Through all of this should run the thought that you never open the hive or pull any frame without reason that you can verbalize, and all should be in keeping with your plan. Do allow

"Is let-alone beekeeping supportable today? Yes, I believe it is, as a concept, but not visiting a hive is not supportable."

Continued on Next Page

"To practice let-alone beekeeping today, go to the hive as often as necessary to properly manage your bees. The key word is necessary."

your plan to be flexible though, and be prepared to vary it depending on what you might find in the hive on any given visit. To make all of your planning more effective, give some thought to what you actually do when you open a hive. What can you do toward minimizing disruption? Develop your eye to recognize signs and symptoms before you delve into the depths of the hive. For instance, if you are wondering if your colony has swarming in mind, look carefully at the apparent population level as you remove the covers. Lots of bees on top and between the frames? How about queen cells? Tilt the brood chamber up and look on the bottoms of the frames. If both conditions are present, you need to think some more about swarm prevention. If population does not seem excessive, and if no queen cells are present, swarming is probably not on their minds. No need to disturb them any more on this visit. Of course, this method isn't guaranteed. You will make mistakes. That is all part of your learning. But the concept of looking carefully at everything, and thinking about what you are seeing will do wonders at increasing your efficiency and effectiveness as a beekeeper.

And of course, it will lead you down the path towards let-alone beekeeping done right. BC

Richard Bonney is an Extension Educator for the state of Massachusetts. He is a regular contributor to these pages.

For Beginner's Only

One of the precepts often drummed into beginning beekeepers is - do not overwork your new colonies. Do not open them too often or for too long; they are just getting started and need tender loving care. At the same time, we can't forget the needs of the the novice who is just getting started and needs to learn.

Within reason, a beginner should not hesitate to open his or her colony often, with the specific justifying reason of learning. The first season is critical for both the bees and the beekeeper. Get in there, observe, and learn.

THE CIRCUS HIVE

Dave Heilman

In the year 1825, in Friedburg, a town in the Schwarzwald (Black Forest) of Germany, Wolfgang Gottfried Volling was born. He grew up living at an inn called the Waldwind (Forest Winds), which his parents owned and operated. It was located in the small town of Waldkirch (Forest Church), which is also in the Black Forest. This rustic area of southwestern Germany was characterized most by densely wooded mountains and patchy farmland. Wolfgang was an average youngster except he had an unusual interest in insects. His parents really worried about him because he spent all his free time collecting bugs. He would catch them in glass bottles and watch them closely for hours and hours. When he was about 8 years old, he had his first real encounter with *bienenhonig* (honey bees). It seems that a swarm of bees landed on the gate outside the door to the inn. His parents thought that he had lost his mind when he went up and brushed the bees into a wooden box without any protective clothing on at all. He had heard how to handle *bienenschwarm* (bee swarms) from his Uncle Gottfried, and this was his first opportunity to catch one.

Wolfgang Volling

Later that night when his mother, Trudle, went to tuck him in, she went screaming from the room. His father, Ludwig, ran to see what the problem was and found Wolfgang with the box of bees in his bedroom. This created quite a scene for the guests, some of whom checked out shortly after they heard about the bees being inside. His parents were furious at his actions and told him he could no longer spend foolish time with *wanze* (bugs)! Needless to say, little Wolfgang didn't do much sitting down for the next few days. But even though he was spanked for his actions, from that day on, he developed a real fascination for honey bees. He was just too amazed at how gentle they were.

Since his father had laid down the law and was making him get rid of his bees, Wolfgang thought that he would be sneaky and hide his bees in the woods. With the help of his uncle, he was soon up to about a dozen hives; most were in *klotzbeute* (log gums), but some were in wooden boxes. This created a new problem: What was he going to do with all of the honey. His uncle took most of it, sold it in town and gave the proceeds to Wolfgang. The remaining honey was taken to the inn and passed off as his Uncle's. This went on for almost three years until one of Wolfgang's brothers squealed on him. His parents were very displeased with his disobedience and even more so with Uncle Gottfried. However, they could no longer call it foolishness because he had earned quite a sum of money, and it was an added attraction at the inn to have fresh honey on the dining table.

Now that his parents knew his secret, Wolfgang's "bee fever" worsened. He began increasing his colony numbers whenever the chance arose. He just couldn't seem to get enough of beekeeping. Soon he was earning tips from guests at the inn by dazzling them with his bees and letting them taste the honey on bread which his mother baked. In the years to come, word got around, and this became a major attraction which brought many to stay at the Forest Winds.

Getting bees back in the early 1800's was not as simple as buying a package of bees through the mail or a hive from a local beekeeper. The best way for Wolfgang to get bees was

Close up of the fold-up style landing board. This end of the hive would have faced outside the bee house. When folded up, the bees would have been confined inside the hive.

The front door open shows the two glass panes in the frame, with slits through the frame so bees could get into the hive proper.

A view through the open back door, showing the queen excluder hanging vertically mid-way through the hive. A single frame is also visible. Bee space worked on top and bottom, but not the sides.

to find them out in the forest. He and his two younger brothers, Friedrich and Ludwig, would go to the streams and creeks to find bees collecting water. Upon finding some bees, they would try to follow them back to their hive. This was a very simple kind of bee lining, but took much time and patience. Once he had located a colony, Wolfgang found himself with a dilemma. How could he get up to where the colony was? You see, Wolfgang was afraid of heights.

Well it took some coaxing and a bribe of candy, but he soon talked Friedrich into climbing trees to get to the bees (Does this sound familiar to any of you older brothers?). Wolfgang and Ludwig would smoke the bees from the ground while Friedrich climbed the tree and harvested the goodies. They would smoke the hive by using a smoldering cloth on the end of a pole which they held near the opening of the hive. This worked well, until one day they ran into a particularly feisty colony which chased poor Friedrich out of the tree, but not before admonishing him with many stings to the head. The next day his face was so swollen that he could hardly see. It was a sight his brothers and sisters thought to be extremely amusing. Needless to say, that was the last time Wolfgang was able to get Friedrich up a tree to get honey and bees. After that episode, Wolfgang became a tree climber out of necessity as he soon found he couldn't bribe or pay anyone enough to get them to go up.

Harvesting honey by robbing bee trees worked, but was very time-consuming. Wolfgang found that other beekeepers would throw a rope over a limb near the hive. They would then tie a seat to the end of the rope and pull themselves up to where the colony was after putting on a *bienenschleier* (bee veil). Smoke would be applied using a *dathepfeife* (pipe). The next step was to cut a large hole into the side of the tree and remove all of the combs and place them in a box. This box was then secured to the tree near the original hive. After about a week, the box would be taken down at night and moved to a yard with other hives.

As Wolfgang got older, his passion for bees grew even more, which led him to learn everything he could about honey bees. He would travel to other towns whenever he could get away from helping at the inn. By the time he was 20 he had over one hundred hives of many different styles, most of which were *korben* (skeps).

One hive he owned I have nicknamed the "circus hive" because it reminds me of an old circus wagon. The hive is mostly red with green and gold accents. This hive measures 15 in. wide, 30 in. long and 26 in. tall. It is made of wood with woven straw inserts on all sides and has doors on each end which open for working the hive. On the front door there are two entrances with foldout landing boards. As you open the front door you first see an observation panel with two glass windows. After removing the observation panel, two levels of frames are revealed. Each tier holds 16 frames which measure 9-1/4 inches on each side. At the halfway point between the front and back, there is a perforated piece of zinc which acts like a queen excluder. The hive is mostly held together by wooden dowels; nails were used in its construction only on the very large lid and trim moldings. The "circus hive" is in very good shape considering its age (1840 - 1860?). This is largely due to its being used in what was called a *bienenhaus* (bee house). Bee houses were shelters designed so that the colonies were protected from weather and theft. The house had holes in the walls, and the hives were pushed up against the holes to allow the bees to fly out. The house had a door which would allow the beekeeper entry to the hives so that he could work them. Usually there were openings along the ceiling that would let any bees out that got into the building during hive inspection. Bee houses were very popular in

Continued on Next Page

THE CIRCUS HIVE ... Cont. From Pg. 635

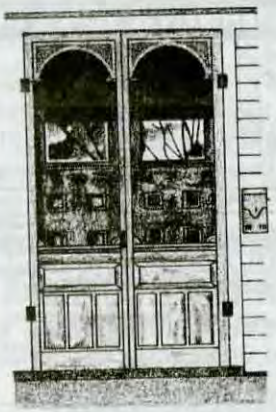
many European countries and are still used today.

Wolfgang married a local girl and had two daughters and four sons. He took over the family business from his father but still ran his hives on the side, which brought in almost as much income as the inn. Wolfgang was a very well-known and respected beekeeper. Two of his sons, Rolf and Ernst, followed in their father's footsteps and carried on his beekeeping business. The Volling bee business endured for five generations, and its memory is still alive in the family today. Wolfang Gottfried Volling was very much a pioneer in beekeeping. He tried many hive designs which he constructed from his own ideas and ones he read and heard about. Several of these hives and a few other items were set aside and handed down from generation to generation as part of his legacy.

We are fortunate to have one of Wolfgang's hives on display at The Ohio State University's Agricultural Research and Development Center's (OARDC) beekeeping museum in Wooster, Ohio, which was started in 1994. In the short time that it has been open, thousands of people have already visited. Though it is still small, we have just been given more room to expand. To keep up with our growth, we ask for your help in keeping alive our national beekeeping heritage. Look around your garage, barn, and attic for items which you would like to donate to this public collection. Sought after items include photos, books and magazines, old or different-style beehives & equipment, honey pots, and extractors. These items do not have to be old, they can be one-of-a-kind or otherwise unusual. Our intent is to have this museum become the "Industry's Attic" where people can donate items which will be preserved for future generations. In other countries there are many museums which record the history of beekeeping, but here in the United States there are only a very few public museums. Currently, the museum is only open during local beekeeping workshops and by appointment. If you are going to be in the area and would like a tour please call or write Dr. James Tew or me to make arrangements.

On a final note we are sending out collectors edition Paris, IL postage stamp cancellations on OSU Honey Bee Lab envelopes for $15 in order to raise funds for operating the museum. There are five different postage stamps all with the same Cancellation. Please contact me, David J. Heilman OSU Honey Bee Lab, OARDC/Dept. of Entomology, 1680 Madison Ave., Wooster, OH 44691, 330-263-3684. BC

Dave Heilman is Apiary Assistant at the OARDC Honey Bee Lab in Wooster, Ohio, and serves as Historian at the Beekeeping Museum there.



Ann Harman

Home Harmony

Southern Cooking - First Edition

Some parts of the country are getting a bit chilly now, so we are going to head for warmer places and take a tour of the South. Since Southern cooking has been world-famous for a long time, we are looking forward to sampling some foods that make the meals in that region so delicious.

If you list some of the South's native foods, I am sure you will find these: peanuts, biscuits, sweet potatoes, peaches, citrus fruits, corn bread, chicken and ham. Yes, I know this is not nearly a complete list but it's a good start. Southern cooks can make good use of honey in their recipes since honey is such a versatile ingredient. Ready to travel? Good, let's start.

SKILLET CHOPS WITH RICE

4 to 6 thick pork chops
2 tablespoons oil
1 small onion, chopped
1/2 cup sliced celery
1-1/4 cups water
3 tablespoons honey
1 teaspoon salt
1/2 teaspoon basil, crumbled
2 8-oz cans or 1 15-oz can tomato sauce with tomato bits
1 cup regular white rice
1 10-oz package frozen peas

Sprinkle chops with salt and pepper. Brown well on both sides in oil in skillet. Remove chops. Sauté onion and celery in same skillet until soft but not brown. Add water, honey, salt, basil and tomato sauce. Bring to boil, stir in rice and frozen peas. Place chops in rice mixture, cover tightly and simmer 30 to 40 minutes. Makes 4 to 6 servings.

Honey Recipes From Florida Honey Queen

HONEY BARBECUED FARM-RAISED CATFISH

The South is noted for its fish and seafood, either from its rivers or from the Gulf of Mexico. Southerners have known the delights of catfish and have introduced it to other parts of the country. This next recipe is a prize winner from a catfish cooking contest – and it uses honey!

4 pan-dressed, farm-raised catfish (10 to 12 oz each), fresh or frozen
2 tablespoons cornstarch or flour
1 cup tomato catsup
3 tablespoons unsalted butter or margarine
3 tablespoons finely chopped green onion
2 tablespoons lemon juice
2 tablespoons Worcestershire sauce
1 tablespoon honey
1 tablespoon pineapple preserves
1/8 teaspoon garlic juice
1/8 teaspoon liquid hot pepper sauce
1/8 teaspoon charcoal seasoning (opt.)
4 slices pineapple
2 cans (16 oz ea.) white, whole-kernel corn
2 tablespoons melted butter or margarine
red onion rings
lemon wedges

Thaw fish if frozen. Score fish on both sides, diamond-shaped, making cuts approximately 1 inch apart. Dust fish with cornstarch. Place fish on a well-greased broiler pan. In a saucepan, combine catsup, the 3 tablespoons butter, green onion, lemon juice, Worcestershire sauce, honey, preserves, garlic juice, liquid hot pepper sauce and charcoal seasoning, if used. Bring mixture to a boil, stirring constantly; simmer for 10 minutes. Brush fish liberally with sauce, making sure sauce gets into scored sections. Broil approximately 6 inches from source of heat for 8 minutes. Turn fish and brush with sauce. Place pineapple rings on broiler pan with fish. Continue to broil another 8 minutes or until fish is opaque and flakes easily when tested with a fork, and pineapple is slightly browned. While fish is broiling, heat corn. Drain liquid from corn and stir in the 2 tablespoons melted butter. Spread corn over bottom of a warm shallow platter, building up sides slightly. Put the catfish down the center, flanking with 2 pineapple slices on each end. If desired spoon remaining heated sauce over the catfish only, or serve separately. Garnish with red onion rings and lemon wedges. Serves 4.

Catfish Farmers Of America And The State Of Mississppi

HONEY MARINATED SHRIMP SALAD

Now for a treasure from the Gulf. If you live in the North, you may want to save this recipe until warm weather returns.

1 pound medium shrimp
1/2 cup white vinegar
1/4 cup lime juice
1/4 cup fresh cilantro or parsley, chopped
2 tablespoons honey
1 tablespoon cumin
1 clove garlic, finely chopped or pressed
1/4 cup red bell pepper, chopped
1/4 cup green bell pepper, chopped
1/4 cup red onion, chopped
1 avocado
salt and pepper to taste

Cook unpeeled shrimp in 2 quarts of boiling water until shrimp turn pink, about 3 minutes. Drain and run under cold water. Set aside to cool. Then peel and devein. Prepare marinade by whisking together next 6 ingredients in medium bowl. Add salt and pepper to taste. Gently toss shrimp, chopped peppers and onions in marinade until well coated. Refrigerate, covered, for at least 1 hour, or up to 8 hours. To serve, peel and chop avocado. Toss together with shrimp. Serves 4.

Golden Blossom Honey Beeline

CORN BREAD

Corn bread would make a perfect accompaniment to any one of these main dishes. This next recipe came from the TARA (Georgia) Beekeepers Association.

2 cups corn meal
1/2 cup flour
4 tablespoons melted shortening
2 cups buttermilk
1 teaspoon salt
1 teaspoon soda
1/4 teaspoon baking powder
1/4 cup honey

Mix together dry ingredients. Add rest of ingredients all at once and mix well. Heat an 8x8x2-inch pan and pour batter into hot pan. Bake at 350° for 45 minutes or until done.

Continued on Next Page

HOME ... Cont. From Page 637

PEANUTTY SWEET POTATOES

Now we need to sample some sweet potatoes. And while we are at it, we'll include some peanuts and oranges, too.

2-1/2 cups cooked and mashed sweet potatoes
1/2 cup peanut butter
1/2 cup orange juice
1/4 cup honey
1/4 teaspoon salt

Combine sweet potatoes, peanut butter, juice, honey and salt. Beat thoroughly. Pour into buttered 9-inch pie plate. Bake at 350° for 20 to 25 minutes. Remove from oven. If desired, place 1/4 cup miniature marshmallows on top. Return to oven for 5 minutes or until marshmallows are melted and lightly browned. Yield: 5 to 6 servings

Cooking With Sweet Potattoes
The Sweet Potato Council of U.S., Inc.

PECAN AND HONEY TOPPING

Since the holiday season is coming soon, we can use the beautiful pecans from the South to make a nice Christmas gift that is appropriate for anyone. This gift features your honey, too. Select an attractive wide-mouth jar. The hexagonal ones sometimes used for honey are particularly nice. But whatever you select, make certain it has an opening big enough for a teaspoon to go through. You can decorate the jar with ribbon or put a piece of fabric with Christmas colors or motif over the lid and tie with ribbon. One nice thing about this recipe is that children can make it. You may wish to make a special holiday label for the jar. If children are making the gifts, let them design and draw their own labels.

Fill jar very full of pecans. Halves look nice, but pieces will fill in the spaces nicely. Then pour honey into jar. If the honey is slightly warmed, it will pour easier and will eliminate air spaces caught between the pecan pieces. Fill jar to within 1/2 to 3/8 inch from top. Seal tightly.

It looks like time is running out for the first part of our journey around the South, and we have only sampled a few of the treats awaiting us there. After a break for Christmas, we'll resume our journey through the foods of the South. Oh yes, be sure to save room for dessert!

Richard Taylor

Bee Talk

"This piece of equipment should be in everyone's honey house (or equivalent)."

I have remarked many times that no two seasons are alike in beekeeping. Every season holds its surprises, often things that you could not have imagined were going to happen. Well, this season was the strangest in my long memory. Beekeepers started out discouraged and depressed as never before. Many had lost all their bees to mites and a cruel Winter. I was nearly wiped out, and so discouraged that I didn't really expect to have any honey at all. I revived my apiaries as best I could with packages, but they came too late to do much good, I thought.

Then what happened? We got a sustained honey flow, mostly from basswood, resulting in a record crop! The weakling colonies of a few weeks earlier filled super after super without letup. Roger Morse, who has been involved with beekeeping here for a very long time, told me he had never seen so much honey in a single season in his life. And beekeepers around here were selling that honey, in sixty-pound buckets and drums, for ninety cents a pound, a record price in my experience.

This is the fifth year that we have been getting huge honey crops, even with the problems caused by parasitic mites, and some have suggested that the mites might, in fact, be contributing to these good crops by reducing competition from feral colonies. This always seemed implausible to me because I have always found that I got about as good a per-colony yield in my large apiaries as in my smaller ones. Certainly a colony in a large apiary has more competition from other colonies than one in a small apiary. So it did not seem to me that the larger crops were the result of declining competition. Still, it has been found that the increased crops this year have been in those areas, like the Northeast, where there are lots of woodlands and hence lots of nesting sites for feral colonies, and that in those agricultural states of the Midwest, where there are fewer woodlands, the honey crop was down this year. That certainly tends to support the suggestion that our increased honey crops are at least partly due to a decline in competition from feral colonies.

Before anyone starts making predictions about future crops, however, we should bear in mind what I said at the outset. Beekeeping is always full of surprises, and predictions here are pretty worthless.

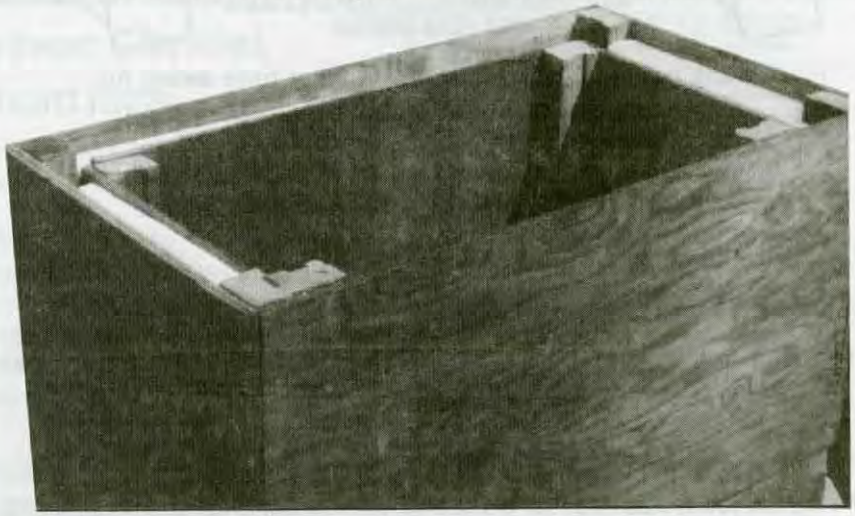
Now I want to change the subject to talk about a piece of honey house equipment that I made up this year. It's a honey warmer. It liquefies two five-gallon buckets of honey with the greatest of ease and minimal cost, and it costs very little in either time or money to make it up. It is not my invention. I got the idea from Mr. Duane Waid, one of our very best beekeepers around here.

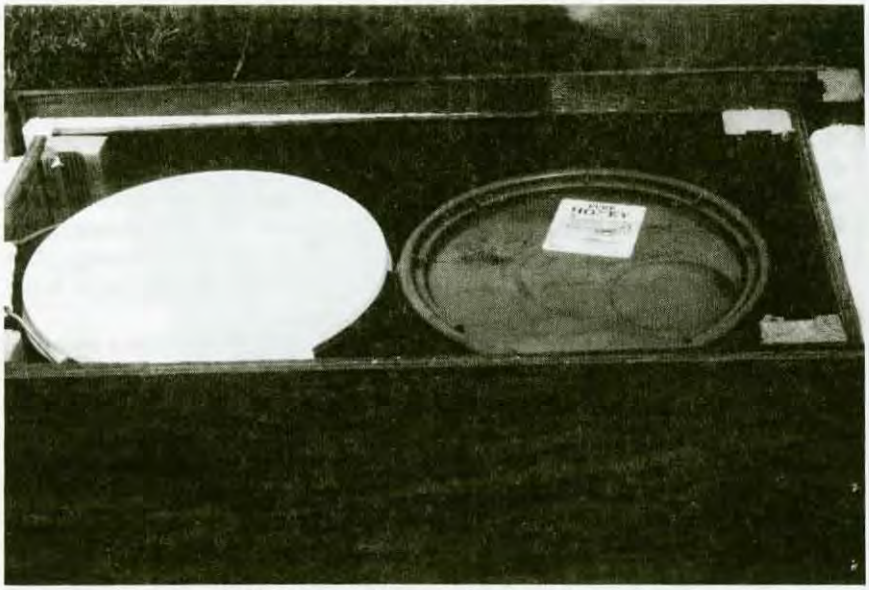
This honey warmer consists simply of two boxes, one sitting on top of the other. The bottom shallow box contains two 100-watt light bulbs. The top box is well insulated and holds the two five-gallon buckets. I made mine up mostly from scrap lumber I found out in the barn. I did have to pay three dollars for the 2' by 4' panel of beadboard insulation, but that was about it.

Here, more precisely, is how you make this honey warmer.

The bottom box is made of standard 2" by 12" lumber. It does not really need to be that deep, but you do need the thick wood so that the top insulated box can be set on it. The sides are 32" and the ends 14" and the sides are then nailed to the ends, not vice versa. Mount a light

The inside of the box, showing the 'double box' construction with insulation.





Pails in place, being slowly warmed from below.

The complete unit, showing the bottom box, cover and electric cords for the lights.

socket in each end, using a single 100-watt bulb in each, and fix some sort of rack on top to hold the buckets of honey. My rack consists of three sticks of wood, crosswise. The ends can be seen in the picture.

The top box is really two boxes, one inside the other, with beadboard insulation between. Do not use spun glass insulation, as particles of this could get into the honey.

These boxes can be made from scraps of quarter-inch plywood or masonite. The inside box is 16" deep. The sides are 26-1/2" long and the ends are 14" These are nailed to 2" x 2" scrap lumber at the corners.

The outside box is 17" deep. The sides are 32" long and the ends 18" These also are nailed to scrap lumber at the corners, as shown. With one box inside the other, you have a space all around for the beadboard insulation, with another on the top.

Now all you have to do is set two buckets of granulated honey into the top double box, put on the lid, and turn on the two bulbs. In twenty-four hours the honey is completely liquefied, all nice and warm and ready for straining and bottling.

Just as a precaution, you should put a scrap of aluminum or aluminum foil in the bottom of the top box, over each of the bulbs. This will prevent any overheating in the bottom of the bucket that is right over the light bulb.

This seems to me to be about the greatest thing since the invention of sliced bread. I used to think honey had to be reliquefied in a hot water bath with an immersion heater and thermostat. That took only six hours, with the thermostat set at 130°F., but some of the honey got raised to that temperature while there was still a large lump of solid honey in the center. This slower system is vastly better. The honey never gets overheated. The equipment is simple. The work is negligible – nothing more than lifting a couple of buckets of honey into and out of the warmer. And the operating cost is only that of the two light bulbs. BC

Richard Taylor is a philosopher & lifelong beekeeper who lives in the Finger Lakes region of New York. You can reach him at Box 352, Interlaken, NY 14847.

?Do You Know Answers?

1. **True** Healthy bee larvae normally pupate four days after they have been sealed in their cells. Larvae with sacbrood fail to pupate, and remain stretched on their backs with their heads toward the cell capping. Fluid accumulates between the body and the tough unshed skin, and it turns from white to pale yellow. Within a few days it dies.
2. **True** *Nosema apis*, the protozoan that causes nosema disease does not infect honey bee larvae. Newly-emerged bees are always free of infection, but they are as susceptible to the disease as older bees.
3. **False** Even though nosema disease appears to aggravate dysentery, there is no evidence that it is the primary cause. Dysentery is the result of excessive moisture in the gut contents and results from long periods of confinement and high moisture levels in the food stores.
4. **False** European foulbrood is a bacterial disease of honey bee larvae. If the larva survives and pupates, the bacteria that multiplied internally are then discharged with the feces and deposited on the walls of the brood cells. Unlike American foulbrood, this bacterium does not produce spores.
5. **False** American foulbrood is a bacterial disease of honey bees caused by *Bacillus larvae*, a rod-shaped bacterium.
6. **True** European foulbrood infected larvae that survive produce pupae of subnormal weight because the bacteria in the mid-gut have assimilated much of their food. Larvae are susceptible to infection at any stage of their unsealed life, but the older they are the less they are affected, because they lose proportionately less food to the multiplying bacteria.
7. **True** The bacteria that causes European foulbrood are swallowed with contaminated food and multiply in the mid-gut of the larva.
8. **True** European foulbrood is considered to be a stress disease and is most prevalent in spring and early summer. The disease frequently begins to disappear with a nectar flow and may disappear entirely for the balance of the year; or it may reappear during nectar dearths in the summer and fall.
9. **False** American foulbrood spores are ingested during the larval stage and death occurs after the cell is capped, during the prepupal or pupal stage.
10. **False** The entire tracheal mite life cycle is spent within the trachea or breathing tubes in the thorax of adult honey bees except for brief migratory periods. Within 24 hours after worker bees emerge from their cells, female mites migrate into their trachea by passing through the first thoracic spiracle and remain there for life's duration or until their host dies. As new mites are produced, mating occurs within the tracheae. The males remain there and eventually die while the females move on to other bees. Sibling matings are common due to the restricted environment inside tracheal tubes and lack of migration by males.
11. **True** Larvae die of chalkbrood after the cells have been capped.
12. **True** Death from American foulbrood typically occurs after the cell is capped over a four day period, during the prepupal and pupal stages.
13. **False** European foulbrood generally kills larvae 2 to 4 days old while they are still coiled in the bottom of cells; before the cells are capped.
14. **True** Death from sacbrood usually occurs after the cell is sealed and the larva has spun its cocoon.
15. C) Terramycin
16. B) Melissococus pluton
17. Brood combs should be replaced periodically for several different reasons:

    *Over time brood combs become narrower in diameter, producing smaller bees.

    *Old wax comb, loaded with impurities, has been associated with increases in diseases, like chalkbrood, foulbrood and nosema.

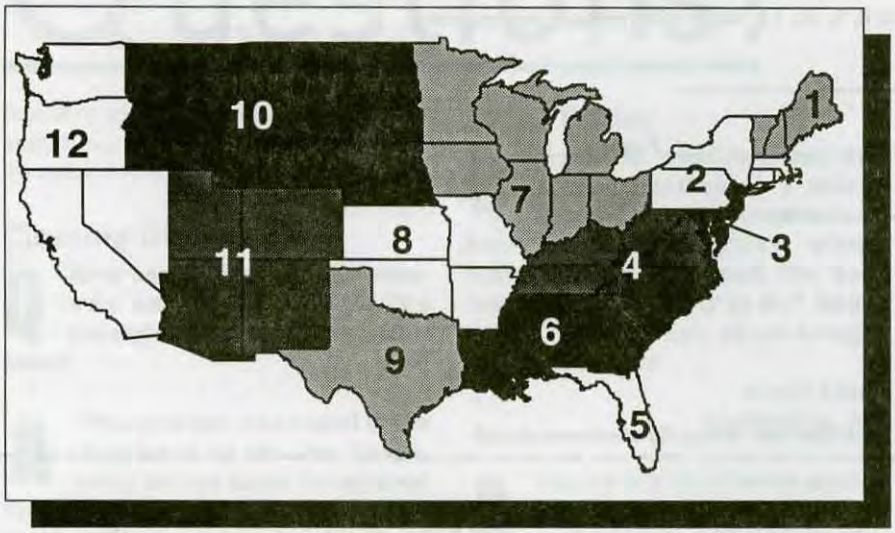
    *Wax comb acts like a sponge, accumulating toxic levels of air pollutant particles like lead, mercury, and pesticides.

    *To reduce the amount of drone comb/brood in the colony.
18. A capping scratcher can be used to sample for *Varroa* mites in a colony. Pupae are examined, preferably drone, and they are obtained by inserting a capping scratcher at an angle through the cappings and pupae and cappings are lifted upward. The reddish-brown female mites are easily recognized against the white surface of the pupae.
19. The best way to control wax moth in living honey bee colonies is simply to keep strong hives. Large numbers of adult bees effectively kill wax moth larvae and limit their populations.
20. Adult Female Varroa Mites
21. Chalkbrood Disease
22. Septicemia
23. American Foulbrood

There were a possible 25 points in the test. Check below to determine how well you did. If you scored less than 12 points, do not be discouraged. Keep reading and studying- you will do better in the future.

Number Of Points Correct
25-18 Excellent
17-15 Good
14-12 Fair

ATTENTION READERS



Starting in the January, 1997 issue of *Bee Culture*, we will be changing our Honey Report to more accurately reflect the honey producing regions in the U.S. (It's still not perfect, but we had to keep it in state-size segments). For our first edition, we're asking all of our readers to fill out and return the form we regularly send only to our reporters. This month, we're asking you to fill out the form as best you can. Then, either photo copy or remove the page and return it to us as a self-mailer at the address on the reverse side or Fax it to us at 330-725-5624. Please return by December 1, 1996.

★**REGION YOU LIVE IN (SEE MAP)** _____★

Fill in as many as you can in both columns and the bottom.

BULK SALES:
(Average price you *sell* for or *buy* for)

1. 60 lbs. **(per pail)** White _____
2. 60 lbs. **(per pail)** ELA (or darker) _____
3. 55 gal. drum **(per lb.)** White _____
4. 55 gal. drum **(per lb.)** ELA (or darker) _____

CASE LOTS – WHOLESALE:
(Average price you *sell* for)

5. 1/2 lb. (per case of 24) _____
6. 1 lb. (per case of 24) _____
7 2 lb. (per case of 12) _____
8. 12 oz. Plastic (per case of 24) _____
9. 5 lb. (per case of 6) _____

RETAIL (Store Shelf) PRICES:
(Please supply average retail price)

10. 1/2 lb. _____
11. 12 oz. plastic/bottle _____
12. 1 lb. _____
13. 2 lb. _____
14. 3 lb. _____
15. 4 lb. _____
16. 5 lb. _____
17 1 lb. creamed _____
18. Comb honey (boxed) _____
19. Round Plastic Comb _____
20. Beeswax (light) wholesale price _____
21. Beeswax (dark) wholesale price _____
22. Pollination Rental Fee (average per colony) _____

Some Additional Information:

No. of colonies you operate ____ No. of years keeping bees _____ Do you sell honey? _____

1. Amount of honey to sell this year: _____ 2. Most popular size container you sell _____

3. Three top nectar sources this year 1._____2._____3._____

4. I plan to expand honey sales next year (yes or no) _____.

5. I plan to decrease honey sales next year (yes or no) _____.

6. Most serious problem you face keeping bees _____

_____

Thank you for your assistance.
You can FAX your Honey Report to us – FAX (330) 725-5624.

Questions?

Readers please note: Questions not accompanied by a stamped envelope do not receive a direct response.

Cleaning Glass

Q How can I clean off the beeswax and propolis from the plexiglass in my observation hive?

A This question was raised in the July issue by Mr. Jim Harris, and I did not know the answer. The reason for using plexiglass for an observation hive is that it is hard to get regular glass out without breaking it after the bees have glued it in with propolis. I suggested applying vasoline to the edges of the glass so it won't stick. But Mr. Ralph Rodea, in Oregon, has a better idea: Wrap the plexiglass with clear plastic kitchen food wrap, which can then be peeled off. And Mr. Al Landon, of Jeffersontown, Kentucky, has another solution: WD-40. He says to use a plastic scraper to get off the excess wax and propolis, then spray on the WD-40, let it stand a while, then wipe it clean.

The One-And-A-Half Advantage

Q You recommend a one-and-a-half story hive for getting comb honey, with the shallow story on the bottom. Is there any advantage to this arrangement other than enabling one to use the "open brood nest" method?

Les Wasserman
Virginia Beach, VA

A The other advantage is that it is much easier to make splits and nucs. One disadvantage is that you have to put the Apistan strips between the two stories, where the bees will cluster, and this requires lifting the heavier one.

Better Patties

Q My bees wouldn't eat the grease patties so I mixed about three tablespoons of honey with each patty, which made it very soft, and the bees loved it. Is that okay to do? And is it all right to use store-bought honey for this?

Garry Libby
Roslindale, MA

A Mixing in a bit of honey sounds like an excellent idea. I have had trouble with the patties being somewhat granular and tending to fall apart. One good beekeeper I know adds a bit of cooking oil to get a better consistency. It is probably okay to use store-bought honey, but you would be more on the safe side using honey from a known, safe (disease free) source.

What Killed Them?

Q I checked one of my hives on a warm day in February and found the colony had died. I had put Apistan strips in the brood boxes in the Fall and the bees had plenty of honey. What killed them?

Rich Weiford
Mooretown, NJ

A Mites, probably *Varroa*. My guess is that (1) the strips were not in the center of the cluster, where the bees would be in constant contact with them, or (2) they were probably put in the hive too late.

Reducer Up, Or Down?

Q I have read that the restricter board, put in place during cold weather, in front of the opening, should be positioned with the restricter opening in the top position. This seems illogical, since the bees could not then clean debris from the bottom board. Is this correct? If so, why?

Sam Rollinson
Childersburg, AL

A By the restricter board I assume you mean the entrance guard consisting of a notched stick that is inserted in the entrance to keep mice out in Winter. I can imagine no reason for inserting this with the notch up. But let me add that I do not recommend using these entrance guards at all. They make it difficult for the bees to keep the bottom board clear of dead bees or other debris, and sometimes the small entrance can become completely clogged and cause the bees to suffocate. I use a wedge of "hardware cloth," that is, wire screen with quarter-inch holes, held in place with a couple of staples or thumb tacks. These can be left in the entrance the year 'round, keeping mice out without restricting the entrances for the bees.

Editor's Note: *Leave the entrance 'up', because if left 'down' it would become clogged with dead bees. If 'up' it will (probably) stay open.*

AFB Honey Safe?

Q Is honey that is infected with American Foul Brood safe for human consumption? And are combs from a colony infected with AFB safe to use in another hive if no brood has been raised in them?

J. B. Barrett
Gaston, Ind.

A Honey containing AFB spores is perfectly safe for human consumption. But no, combs from such a hive are not safe for brood rearing even though no brood has been raised in them. The spores are very viable, and contaminated equipment should not be used. It should be added, however, that it is not, in my opinion, necessary to burn supers of honey taken from an infected hive. These can be simply put on strong colonies and eventually extracted and the supers reused for honey.

Continued on Next Page

Swarm Preventor?

Q Would it be possible to prevent swarming just by putting a piece of queen excluder over the entrance of the hive? Would that slow down honey production? And would the queens inside fight?

Joel Grunk
Pascagoula, MS

A No, it would not prevent swarming. Bee supply companies, several decades ago, sold devices for just this purpose, called "Queen and Drone Traps." The device was made of queen excluder grid, and designed to confine queens and drones. The idea was to trap and destroy the drones, and trap any queen that attempted to leave with a swarm. It turned out to be an invention of the devil. Trapping and destroying the drones demoralized the colony. And while it is true that a swarm will not leave without a queen, there is no way to get the swarm and queen to go back into the hive and stay there.

Do All Hives Swarm?

Q No matter what I do (short of splitting hives) I cannot seem to prevent swarming. I have supered early, reversed brood chambers, provided shade and so on, and I still get swarms. The bee literature makes it sound like you are something of a failure if your bees swarm. Do you ever have unexpected swarms?

George Piper
Torrington, CT

A Swarming has to be looked at as a normal aspect of bee biology. It is the way the colony reproduces. The species would, but for the intervention of human beings, perish if they did not throw swarms, since it contributes nothing to their survival merely for colonies to become bigger and bigger. I note that you do not split hives. I believe that every effective swarm control measure involves splitting the colony in one way or another, by removing combs of brood. Swarming cannot, in my opinion, be prevented otherwise. And yes, I sometimes get unexpected swarms, and it always gives me a feeling of incompetence.

Questions are welcomed. Address them to: Dr. Richard Taylor, Box 352, Interlaken, New York 14847, enclosing a stamped, addressed envelope.

Answers!

Richard Taylor

Gleanings

NOVEMBER, 1996 • ALL THE NEWS THAT FITS

AHB IN CALIFORNIA REPORT

Fig. 1

Africanized honey bees (AHB) were first detected in California when a single colony was found near Blythe in October 1990. Since then, 31 more colonies have been identified by the California Department of Food and Agriculture in Imperial and Riverside counties. Most finds have been within the Imperial Valley and along the Colorado River near Blythe and Winterhaven, giving hope that their spread may be restricted to those areas by the Mohave Desert. However, a recent find at the north end of the Salton Sea suggests that they may now spread into the Coachella Valley toward Palm Springs and, perhaps, over the mountain into Riverside.

Clearly, the rate of spread of AHB in California is slower than occurred throughout Northern Mexico and southern Texas and Arizona, although the reason for this is unknown. There have been three plausible hypothesis proposed for their reduced rate of spread: (1) They have reached their ecological limits. The argument here is that they are a tropically-adapted bee and they are not very well suited for our southern California climate. (2) The parasitic *Varroa* mite is decimating the feral population, including the AHB, and slowing the growth of their population. (3) The commercial bees are mating and competing with the feral AHB and reducing their impact and rate of spread.

Hypothesis 3 is the least likely explanation because all of the finds so far have been highly Africanized colonies showing a continuous maternal lineage back to African origins. In other words, all queens in Africanized swarms have been derived from Africanized queens rather than from European queens mated to Africanized drones, all the way back to the original African colonies imported into Brazil in 1956. We would expect to find a mixture of degrees of Africanization with both African and European maternal lineages if the commercial bees were significantly "diluting" the AHB gene pool. We know there is a continuous maternal lineage because all colonies determined to be Africanized based on morphometric techniques (body measurements) also contain African-type mitochondrial DNA. Mitochondrial DNA is inherited only from the female parent (all of us only have mitochondria inherited from our mothers), so it provides a historical record of maternal origins.

We know that Africanized honey bees are in southern California, but how common are they? The method of detection used by the California Department of Food and Agriculture is very sensitive for detecting the presence of AHB. It's sensitivity is a consequence of the awareness of the

Continued on Page 648

AND YOU THOUGHT YOUR HIRED HELP WAS EXPENSIVE!

What your congressman costs you ... before voting for anything:

Salaries, $133,600 for each member of the House and the Senate.

The Speaker receives $171,500. Majority and minority leaders, $148,400.

Pensions vary with time in service and top three earning years. Many former members with 20 years in office receive over $60,000 a year. What's more, congressional pensions are adjusted each year for inflation.

Medical benefits include free outpatient care at Walter Reed and Bethesda Naval hospitals and access to a physician on Capitol Hill.

Other benefits. An annual tax deduction of $3,000 for housing. Free parking at WA area airports. And free mailing to constituents.

Office expenses generally run $125,000 to $250,000 per year.

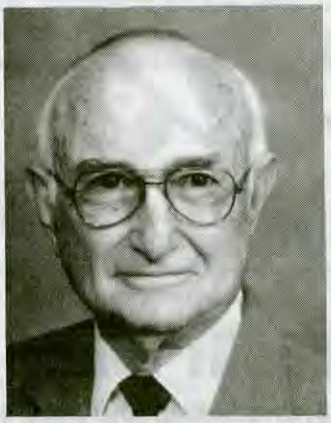
For staffing, House members get $580,000 to pay up to 22 people. Senators, $1 million to $2 million, depending on their state's population.

Morse Still Teaching
CALDERONE TAKES OVER NY EXTENSION

Dr. Nicholas W. Calderone has accepted the position of assistant professor with the Department of Entomology, Cornell University, starting on July 15, 1996. Dr. Calderone replaces Professor Roger Morse who recently retired. Dr. Calderone received his master's degree at The Ohio State University where he studied behavior genetics with professor W.C. Rothenbuhler. He received his doctorate from The Ohio State University with Professor Robert E. Page, Jr. and Professor David L. Denlinger, focusing on the evolution of social behavior in honey bees. Dr. Calderone has spent the past seven years with the ARS Bee Research Laboratory in Beltsville, MD where he has conducted research on host seeking behavior of honey bee parasitic mites and the development of an IPM program for control of honey bee parasitic mites. Dr. Calderone will be continuing this work at Cornell, and will also be studying the evolution of social behavior in honey bees. In addition, Dr. Calderone will implement an extension program in apiculture, focusing on the management of honey bees with special attention to management for control of parasitic honey bee mites, strategies for production of locally adapted stocks of bees, and the application of a computer based economic analysis system to beekeeping.

Obituary

T.E. BURLESON



T.E. Burleson, Sr., passed away Saturday, September 14, 1996. Mr. Burleson founded the first honey packing plant in the state of Texas in 1929, after his father, T.W. Burleson had started a beekeeping business in 1907. The family-owned business, T.W. Burleson & Son, remains the oldest and largest honey packer in the southwest.

T.E. (Edward) Burleson served as president of the Texas Beekeepers Association; the National Honey Board; and the National Honey Packers and Dealers Association. He retired in 1974, however Mr. Burleson remained active in the business until a year ago.

Burleson was a graduate of Trinity University, when it was located in Waxahachie, Texas, with a degree in business. He was very active in the First Baptist Church, where he served as Deacon for over 55 years. He maintained a strong dedication to his community. He was active on the city council, serving as the Waxahachie Mayor in 1945. Burleson played a vital role in organizations such as the Ellis County (American) Cancer Society, The Salvation Army, Rotary Club, Circle 10 Boy Scouts and he was past vice-president of the local Chamber of Commerce.

Referred to as a "giant of a man" by his friends and colleagues, Mr. Burleson will be greatly missed. He was 88.

T.E. Burleson, Jr. will continue to run the family-owned business.

JOHN ALLRED

Lifelong beekeeper, John Allred, of Madera, California passed away on August 27, 1996 at the age of 83. Born at Montpelier, Idaho in 1913, he moved to Madera, California with his family in 1923.

As an industry leader, John chaired many committees of the California State Beekeepers Association, including the research and legislative committees, and was instrumental in negotiating California bee/pesticide issues over the years. He served as C.S.B.A. President in 1968, was selected "Beekeeper of the Year" in 1970, and was named as "Honorary Member" of the C.S.B.A. in 1981.

In late 1971, John was a member of the National Academy of Sciences Committee which toured Brazil to study Africanized bees. He also served as a member of the California Africanized Bee Research Committee in the late 1980s.

AHB ... Cont. From Pg. 647

public and their eagerness to report unusual honey bee colonies, as well as the network of swarm "traps" set out by the CDFA. Their method of sampling is designed to monitor the spread, not to determine how common AHB are within an area. We designed another sampling method for determining how common AHB are in an area. We first tested it in the Spring of 1995 and failed to detect any AHB in our samples suggesting that although they were there, they were in undetectably low numbers.

This Spring we conducted another survey of the same region contained, roughly, in a rectangular area running from Palm Springs to Blythe, south to Winterhaven, west to the eastern side of the Imperial Valley, then north along the west side of the Salton Sea through the Coachella Valley. This area contained the locations where AHB have been detected by the CDFA. We collected a total of 196 honey bees foraging at flowers in 42 locations. We then analyzed their mitochondrial DNA to determine what proportion were of African origin. We found a total of 3 AHB from 2 locations, one near Winterhaven, and two near Blythe. These are both areas where AHB were first detected in California. Altogether we sampled 33 bees from around Blythe for 6.1% Africanized and 20 bees from near Winterhaven for 5.0%. We did not find any in the Imperial Valley from a total of 69 sampled bees. Our survey results demonstrate that although AHB are present in California, and are apparently continuing to spread, they are still at very low densities relative to the European bees in those same areas. This is true even in areas that have had AHB since fall of 1994. These results are encouraging with respect to the ability to maintain an Africanized-bee-free commercial industry in California.

Reprinted From *California Almond News*

Who Eats Dessert?

"Tell me what you eat and I will tell you what you are," wrote famous French gastronome Anthelme Brillat-Savarin in 1825. He's also the one who said "a dessert without cheese is like a beautiful woman with only one eye," so you may not take food quite as seriously as he did. But there's no denying that people and societies reveal much about themselves by what they eat. Take dessert. (Oh, go ahead, *take it.*) Unlike the foods one ingests to keep body and soul together, dessert is an emblem of people's willingness to treat themselves – or, at times, of their inability to stop themselves. So, how self-indulgent are Americans these days?

In a nationwide survey conducted for *Adweek*, just 28.5% of respondents answered "yes" when asked whether they usually eat dessert after dinner. While men (31%) were more likely than women (26%) to say they indulge, the gender gap isn't as wide as one might have supposed. As for a breakdown of the data by age group, only in the 55-and-over cohort were dessert-eaters in the majority (55%). At the opposite extreme, just 20% of the 45-54-year-ods said they usually indulge, as did 23% of the 25-34-year-olds. Flaunting their youthful metabolisms, 33% of the 18-24s identified themselves as regular dessert-eaters.

USDA SAVES LAND

The U.S. Department of Agriculture will give $14.5 million to 18 states that will provide their own funds to help purchase development rights from farmers to keep productive farmland in use, Agriculture Secretary Dan Glickman announced (September 27). Under this program, USDA enters into agreements with states, tribes and local governments to support their efforts to protect farmland through the purchase of easements. To participate, landowners agree to limit the use of their land for nonagricultural purposes and have pending offers for acquisition of agricultural conservation easements from state, tribal or local entities. Proposals from the following states were selected: California, Colorado, Connecticut, Delaware, Florida, Kentucky, Maryland, Massachusetts, Michigan, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, Virginia, Vermont, Washington and Wisconsin.

Statement of Ownership, Management and Circulation
(Required by 39 U.S.C. 3685)

1A. Title of Publication: BEE CULTURE MAGAZINE
1B. Publication No.: 0 1 2 3 3 7
2. Frequency of Issue: Monthly
3A. No. of Issues Published Annually: 12
3B. Annual Subscription Price: $16.50
4. Complete Mailing Address of Known Office of Publication: John Root, P.O. Box 588, Medina, OH 44258-0588
5. Complete Mailing Address of the Headquarters of General Business Offices of the Publisher: John Root, P.O. Box 588, Medina, OH 44258-0588
6. Full Names and Complete Mailing Address of Publisher, Editor, and Managing Editor (This item MUST NOT be blank)
Publisher: John Root, P.O. Box 588, Medina, OH 44258-0588
Editor: Kim Flottum, P.O. Box 706, Medina, OH 44258-0706
Managing Editor: None
7. Owner

Full Name	Complete Mailing Address
John Root, Medina, OH; Stuart Root, Medina, OH; David Root, Sebring, FL; Brad Root, Medina, OH; Elizabeth Judkins, Silver Bay, MN; Katherine Warner, Kent, OH; Andrew Meyer, Mission Viejo, CA; Ruth Packard, Pensacola, FL; Barbara Tweedie, Davidson, NC; Robin L. or Richard Kuntzelman, Bozman, MT; Gretchen Otness, Calaasas, CA; Huber Warner, Bethesda, MD	

8. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages or Other Securities (If there are none, so state)

Full Name	Complete Mailing Address
None	

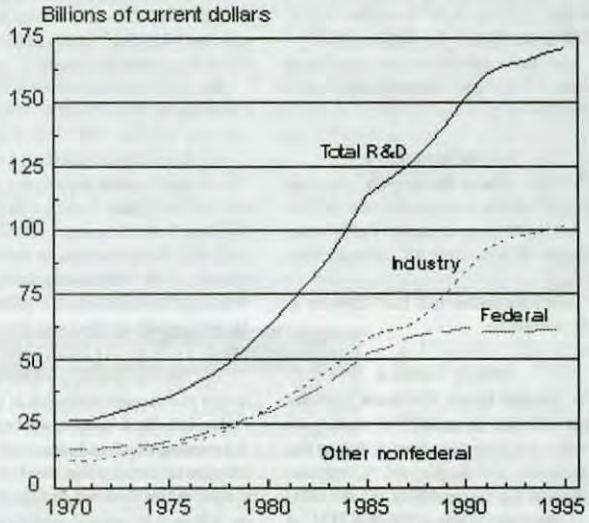
9. For Completion by Nonprofit Organizations Authorized To Mail at Special Rates (DMM Section 424.12 only)
The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes: (Check one)
(1) ☐ Has Not Changed During Preceding 12 Months (2) ☐ Has Changed During Preceding 12 Months (If changed, publisher must submit explanation of change with this statement)

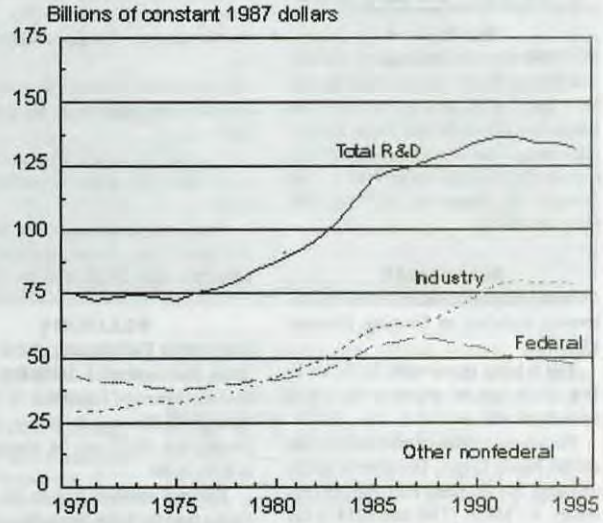
10. Extent and Nature of Circulation (See instructions on reverse side)	Average No. Copies Each Issue During Preceding 12 Months	Actual No. Copies of Single Issue Published Nearest to Filing Date
A. Total No. Copies (Net Press Run)	11,515	11,730
B. Paid and/or Requested Circulation 1. Sales through dealers and carriers, street vendors and counter sales	169	21
2. Mail Subscription (Paid and/or requested)	10,307	10,595
C. Total Paid and/or Requested Circulation (Sum of 10B1 and 10B2)	10,476	10,638
D. Free Distribution by Mail, Carrier or Other Means Samples, Complimentary, and Other Free Copies	193	193
E. Total Distribution (Sum of C and D)	10,669	10,831
F. Copies Not Distributed 1. Office use, left over, unaccounted, spoiled after printing	846	899
2. Return from News Agents	0	0
G. TOTAL (Sum of E, F1 and 2 – should equal net press run shown in A)	11,515	11,730

11. I certify that the statements made by me above are correct and complete. Signature and Title of Editor, Publisher, Business Manager, or Owner: [signature]

PS Form 3526, January 1991 (See instructions on reverse)

National R&D Funding , by source





NOTE: Data for 1994 and 1995 are preliminary
SOURCE: National Science Foundation / SRS

WHAT'S IMPORTANT

A Wall Street survey asked company executives to rank the factors most important to the satisfaction they get from their work. Big corporate execs listed "pride in product/service," "income" and "self-reliance" as their top three. Small-business owners listed the same No. 1 and No. 3 factors, but gave second place to "control of your own time," while they rated money much farther down the list. Surprisingly, they ranked "security" one notch higher in importance than did the big-corporation executives.

ARAB APICULTURE MEETS

The Arab Apicultural Congress was held under the auspices of the Lebanese president of the republic at the American University of Beirut from 17 to 20 August, 1996.

More than 60 reports were presented at the congress. 50 doctors and technicians came from 10 Arab countries to present their papers. 250 beekeepers registered. Six manufacturers of beekeeping equipment participated: Hammann (Germany), Lega (Italy), Gilles Ratia representing Thomas (France), Vernet representing Nicot, Swienty, Weiland & Moulin (France & Germany, Al Yahya (Saudi Arabia) and Yazbek (Lebanon).

The last part of the last day was mainly taken by the general assembly to vote the resolutions. The next congress will be held in Jordan in 1998.

CALENDAR

♦CANADA♦

The 1996 Alberta Beekeepers Association Convention is scheduled for November 4 and 5, 1996, and will be held at the Edmonton Mayfield Inn Trade Centre, Edmonton, Alberta. For more information contact the Association at 11434 168 Street, #102, Edmonton, AB T5M 3T9, (403) 489-6949.

♦ALABAMA♦

Auburn University will hold a Spring beekeeping workshop on Saturday, February 15, 1997.

This is being oganized by Dr. James E. Tew. There will be afternoon open-hive demonstrations.

For pre-registration or more information contact Nancy Griggs, Department of Entomology, 301 Funchess Hall, Auburn University, AL 36849, (334) 844-3214 or Dr. James E. Tew, Department of Enomology, OARDC/The Ohio State University, Wooster, OH 44691, (330) 263-3684, Email Tew.1@osu.edu.

♦COLORADO♦

The Colorado Beekeepers Association will hold their Annual Winter Meeting on December 6th, 7th and 8th at the Ramada Inn at 124 West 6th Ave. in Glenwood Springs, CO

Dr. Jim Tew and Marion Ellis will be among the guest speakers. For further information call 719-254-6321 or 970-848-5501.

♦GEORGIA♦

Georgia Beekeepers Association will have its meeting November 2-3, 1996 at the University of Georgia in Athens, Georgia.

Sue Cobey, Dr. John Skinner and Jack Thomas bring topics on the old and new in beekeeping.

A social will be held at the newly renovated UGA Bee Lab and the traditional Bee Bowl.

For more details, contact: P.N. Williams, 528 Bridge Ave., Forest Park, GA 30050 (404) 366-6404, FAX (404) 366-2216.

♦ILLINOIS♦

The annual Fall meeting of the Illinois State Beekeepers' Association will be held on Saturday, November 2, 1996 in Springfield, Illinois at the Holiday Inn East located near I55/72 exit 94. Meeting time is 8:30 - 4:00.

Featured speakers include Dr. Robert Danka from the Baton Rouge Research Lab and Pat Wagner.

For information contact Ken Beauchamp, 69 Greencastle, Springfield, IL 62707, (217) 529-5277.

♦LOUISIANA♦

The Louisiana Beekeepers Association will hold their 35th Annual Convention in Lafayette, Louisiana on December 6th and 7th at the Best Western/Hotel Acadiana at 1801 West Pinhook Road. Call 318-233-8120 to make your reservations.

For more information contact Steve Bernard at 318-228-7535 or Elaine Miller at 318-873-8452.

♦NEBRASKA♦

The Nebraska Honey Producer's Fall Meeting will be held November 15-16, 1996 at the Holiday Inn in Kearney, NE.

For more information contact Reed Koeppe at 308-234-1226 or Larry Slack at 308-856-4478.

♦NEW MEXICO♦

The New Mexico Beekeepers' Association will hold its annual convention on Dec. 6 and 7, 1996, at Immanuel Presbyterian Church, 114 Carlisle SE, Albuquerque, NM.

For information call Les Crowder at 505-864-0520.

♦NEW YORK♦

The Empire Honey Producers Association will hold its annual Fall meeting on Friday and Saturday, Nov. 8 &9, at the Quality Inn, 1308 Buckley Rd. N, Syracuse, NY (near the intersection of I81 and I90).

Contact Judy Doan at 716-964-3121, or Nick Calderone at 607-254-7417 for more information.

♦OHIO♦

The Ohio State Beekeepers' Association will hold their Fall meeting on Nov. 1 & 2, 1996, at the Delaware Vocational School.

Program highlights include Fall and Spring management, education video reviews and more. For more information, call Dana Stahlman at 614-855-1656.

♦PENNSYLVANIA♦

The Pennsylvania State Beekeepers' Association will hold its Annual Winter Meeting & Banquet at The Country Cupboard, Lewisburg, PA, November 16, 1996.

Speakers include Bob Brooks - PSBA President; Dr. Bill Wilson USDA Research; Scott Camazine Penn State Researcher; Maryann Frazier - Extension specialist Penn State University.

For more information contact Yvonne Crimbring at 717-673-8201.

♦SOUTH CAROLINA♦

The South Carolina Beekeepers Association will host a joint meeting with the North Carolina State Beekeepers Association in Rock Hill, South Carolina on February 28-March 1, 1997. The meeting will be held at Winthrop University which is located about 15 miles south of Charlotte, North Carolina.

The meeting program includes a beekeeper short course beginning at 1 p.m. on Friday, Feb. 28. A banquet will be held Friday evening which includes a buffet meal, tall tales contest and Bee Bowl. A general session will be convened on Saturday morning followed by several workshops in the afternoon.

For more information contact Dr. Mike Hood, Clemson University, 864-656-3111.

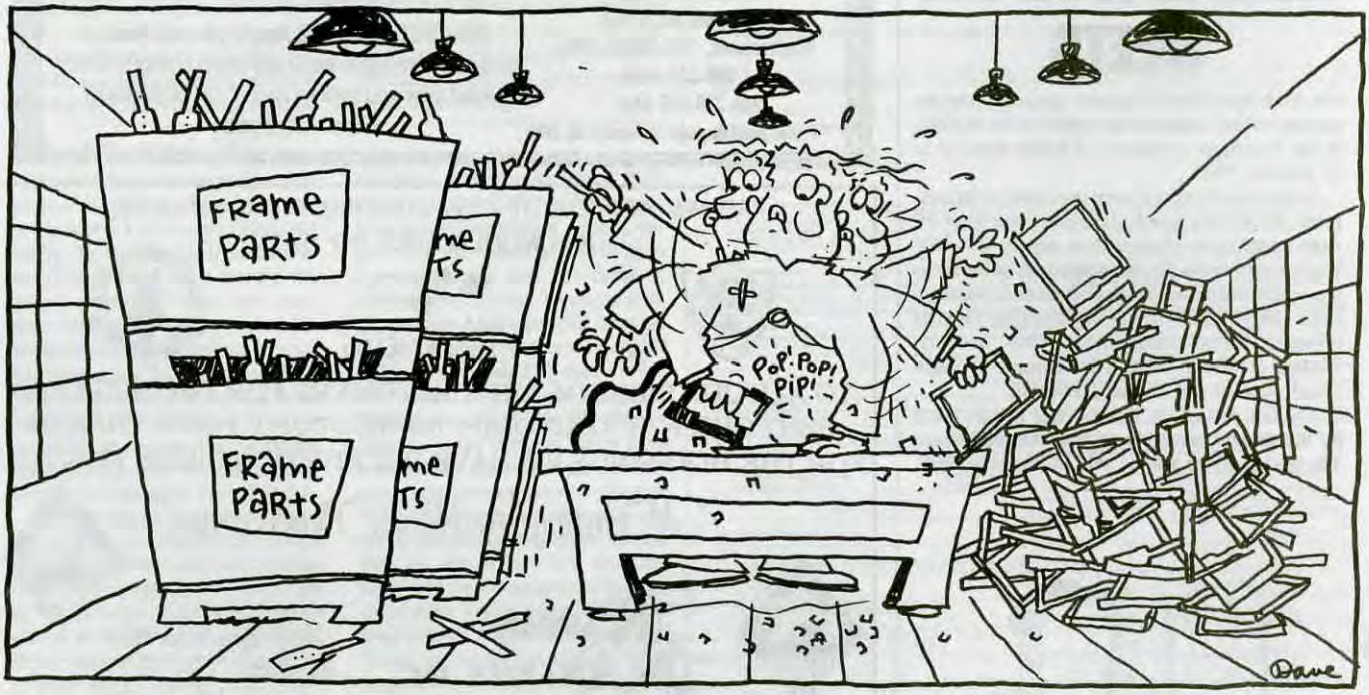
♦UTAH♦

The Annual Convention of the Utah Beekeepers Association will take place December 5th and 6th, in the Auditorium of the Utah State Agriculture Building at 350 N. Redwood Road in Salt Lake City.

Speakers include Dr. Jerry Bromenshenk, along with a seminar for the beekeeping hobbyist.

For more information contact William R. Jones at 286 Andrew Lane, Salt Lake City, UT (801) 262-6079, or 801-355-2033, evenings.

Smokey Dents



Since he bought his new staple gun, his annual frame assembly chore would take only 2 weeks, instead of 2 months. "What," Smokey wondered, "was he going to do in January?"

WAX RENDERING

WAX RENDERING, SLUM RENDERED at $.49 pound or at 50% of yield. Cappings light $.22 lb., cappings - dark $.49 lb. (414) 677-4894. Kathy, Templar Seed & Honey, W 208N16721 S. Center St., Jackson, WU 53037. (TF)

VIDEOS

BEGINNING BEEKEEPING VIDEO 2 hrs! All survival essentials: building hive; installing, feeding, medicating, inspecting, managing bees; harvesting, diseases & parasites; behavior. $35. Dr. Iacobucci, 172-BC Washington, Pembroke, MA 02359 (617) 826-8888. (TF)

BOOKS & NEWSLETTERS

DISCOVER THE DIFFERENCES! New Christian Bible! Accurate, literal, plain English. Scored 809% more accurate than KJV. Beat NASB by 316%, NIV by 455%, NKJV by 376%. Send SASE for free report. Christian Bible Soc., POB 530-B, Mammoth Spring, AR 72554.

AN EYEWITNESS ACCOUNT of Early American Beekeeping by A.I. Root. The pioneers of beekeeping as close your bookshelf. Cat. No. X1, $3.69 postpaid. The A.I. Root Co., 1-800-289-7668. (TF)

PERIODICALS

RURAL HERITAGE – bi-monthly magazine of farming & logging with horses, mules, & oxen. Includes THE EVENER Workhorse, Mule & Oxen Directory; $22 6 issues; sample $6. 281-B Dean Ridge Lane, Gainesboro, TN 38562.

WANT INFORMATION ON EXOTIC animals & marketplace? Wings & Hooves. $16 yr. Dept. 1, Rt. 1, Box 32, Forestburg, TX 76239-9706.

THE SCOTTISH BEEKEEPER. Magazine of The Scottish Beekeepers' Assoc. Rates from D.B.N. Blair, 44 Dalhousie Rd., Kilbarchan, Renfrewshire, PA 10 2AT, Scotland, U.K. Sample $1.

DIE NEUE BIENENZUCHT Monthly magazine for beekeepers interested in German beekeeping. Hamburger Str. 109, D-2360 Bad Segeberg, West Germ.

IBRA: INFORMATION At Your Fingertips. IBRA is *the* information service for beekeepers, extension workers & scientists. Support this important information network & extend your beekeeping horizons. IBRA, 18 North Road, Cardiff CF1 3DY, UK. Phone (+44) 1222 372409. Fax (+44) 1222 665522.

SCOTTISH BEE JOURNAL. Monthly magazine. Sample copy from Robert NH Skilling, FRSA, 34 Rennie St., Kilmarnock, Scotland. $4. per annum.

BEE CRAFT – Monthly journal of British Beekeepers Assoc. Subs., including postage is £13.68 surface mail to L. Connor, P.O. 817 Cheshire, CT 06410.

THE AMERICAN BEEKEEPING FED. needs your support in efforts to stop adulteration, improve marketing conditions & encourage research on African Bees & Varroa & Acarine Mites. For information, membership application and sample of bi-monthly News Letter write to: THE AMERICAN BEEKEEPING FEDERATION, INC., P.O. Box 1038, Jesup, GA 31545-1038.

IRISH BEEKEEPING. Read An Beachaire (The Irish Beekeeper) Published monthly. Subscription $15./year, post free. Mr. Seamns Reddy, 8 Tower View Park, Kildare.

THE AUSTRALASIAN BEEKEEPER. Published monthly by Pender Beekeeping Supplies Pty. Ltd. Send to: The Australasian Beekeeper, PMB 19, Maitland NSW 2320, Australia. Sub. $US 27. per annum, Surface Mail (in advance). Payment by Bank Draft. Sample free on request.

RARE BREEDS JOURNAL. Bi-monthly journal about exotic, minor & rare breeds of domesticated animals & their owners. $18. (U.S.)/year, $24. Foreign; $2.50 for sample. Rare Breeds Journ., Dept. Bee, HCR 1, Box 45, Hebron, ND 58638 701-878-4970.

BRITISH BEE JOURNAL. Monthly single copies 33p + postage. $15/yr. U.S. Ann. subs. postpaid. Sub-agent: 46 Queen St., Geddington, NR Kettering, Northants, NN14 1AZ, England.

Bee interested. For beekeeping information read the AMER. BEE JOUR. New editorial emphasis on practical down-to-earth material, including question & answer section. For information or free copy, write to: AMERICAN BEE JOUR., Hamilton, IL 62341.

THE AUSTRALIAN BEE JOUR. Monthly, SeaMail $30. (Aus.), AirMail $50. (Aus.). Write: Victorian Apiarists' Association Inc., Editor, Ms. Judy Graves, 23 McBride Rd., Upper Beaconsfield, Victoria, 3808, Australia. Sample $3 (Aus.) on request.

ANIMALS EXOTIC & SMALL Subscriptions $10./one year, $19./two years, $29./three years U.S. MasterCard, Visa, American Express and Discover welcome. AES, 1320 Mountain Ave., Norco, CA 91760-2852 (909) 371-4307 FAX (909) 371-4779 e-mail AES01@aol.com.

THE NEW ZEALAND BEEKEEPER. Published 11 times a year Feb - Dec. by the National Beekeeper's Association of NZ. For rates & indicate whether airmail or surface mail. NZ BEEKEEPER, Farming House, 211-213 Market Street South, P.O. Box 307, Hastings, NZ.

SOUTH AFRICAN BEE JOURNAL. Published bimonthly in English & Africaans, primarily devoted to African and Cape Bee races. Subscriptions including postage (six copies). R100-00 surface mail, payment to be made in S.A. Rands. NB. Sample only available on receipt of a donation. P.O. Box 41 Modderfontein, 1645, South Africa.

INDIAN BEE JOURNAL: Issued quarterly. Publishes research on Asiatic honey bees, tropical apiculture and pollination. Sub. (foreign; including surface mail): U.S. $20 for individuals and U.S. $40 for institutions, by Bank Draft payable in Pune (India) drawn in favour of *Indian Bee Journal, Pune* and sent to Dr. Kshirsagar, Editor, 1294 Shukrawar Peth, Pune 411 002, India.

INNER ... Cont. Pg. 604

to fund this organization, but if less than 6,000 lbs./year is sold can file for an exemption from paying. Thus, medium and large producers and importers are the major, but not only players. Lots and lots of small producers and producer/packers also pay.

Every five years, the industry decides if the Honey Board should continue – by vote, and those who pay get to vote. It's their money that's being spent, after all. This year the vote favored continuing the activities of the board.

This is the third 'vote' for the Honey Board. The initial start-up election, a referendum five years ago, (where donations went from voluntary to mandatory), and this year's vote.

These votes, though always in favor of continuing the Honey Board, have not been without some dissent. This one was no exception. Donating a penny a pound three years ago amounted to two percent of a producer's gross. Now that the price of honey is up it is only one percent. But that penny comes right out of a producer's pocket and some feel they're not getting their money's worth, or don't like the fact that others (packers and importers) have a say in how the money is spent or policy decided.

Nevertheless, this year's vote had 82% of the valid ballots favoring continuing the board. All voters combined produced or handled 250 million pounds of honey (remember, voters include producers *and* importers). Those favoring continuing the board represented 77% of that volume.

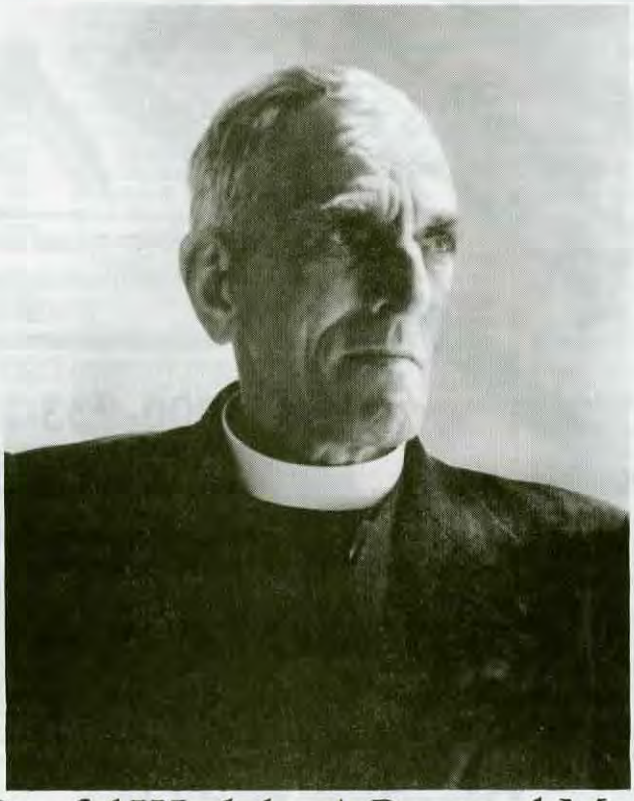
This result speaks well of the activities, and results, of the Honey Board I believe. I've been a supporter of the Board since it's inception (my first-ever published opinion in this magazine said just that). But like all elections, no candidate is perfect and I, too, have some trouble with how the Board operates. Most of this lies with the Government's oversight regulations, and I will explore those at another time.

For now, I congratulate those who voted in their decision, and I applaud the National Honey Board, and their staff, for a job well done, and for five more, what promise to be exciting years.

Kim Flottum

Display Index

Brother Adam . 1898-1996



Careful Work by A Practical Man

A little to the north and west of Buckfast Abbey, near Devon, lies the site of the original apiary Karl Kehrle first came to work in 80 some years ago. In early September this year, he was returned there for his final trip home.

Born in Germany 98 years ago, Karl Kehrle's mother sent him, at the age of nearly 12, to England to help the monks rebuild their Abbey at Buckfast. But the physical effort required to move stones and build buildings was more than Karl's frail body could manage, and he was assigned to work with Brother Columban, the Abbey's beekeeper.

If you subscribe to the notion of Divine Intervention, this was truly such an instance. By the time he was 21, Karle, now a fully ordained member of the Benedictine Order and called Brother Adam, was the Master Beekeeper at the Abbey. A life's calling was being answered.

It was then that fate again stepped in. The devastation of the British bees from the onslaught of the Isle of Wight disease was catastrophic. The only survivors were those that were the result of a cross between the traditional British black bees and a strain of Italians brought to the Abbey to study.

So began Brother Adam's quest to improve the bees at Buckfast. Gentleness, honey production, ability to withstand the acarine mite and to winter well in England's harsh climate were some of the sought-for traits. And over the next 80 years bees from all over the world were collected and crossed and crossed again in the breeding yards on the distant, desolate moors far from Devon.

And success came to Brother Adam's Abbey, and Brother Adam, for the work, and the effort and the resultant world famous Buckfast Bee. Maybe too much success according to some, who knew of the inside world of Abbeys and monks.

But during his life he accomplished what no other institution has done. He was able to devote a career to a single purpose – to produce a strain of bees that did what needed to be done. In so doing he produced several books, traveled much of the world and earned a hearty income for his Abbey. And, late in life came a multitude of accolades and awards and high and royal recognition for this accomplishment.

Brother Adam's life and work have been documented many times in many places, and in far greater detail than here. And the physical and financial stresses and strains his success and his bee brought him, his abbey and his followers are still a matter of debate. His absence will, no doubt, not settle the issues that have been raised.

Nevertheless, the Buckfast Bee has proved itself worthy of the praise, and Brother Adam did what no scientist yet has done. He was a practical man who did careful work, and in the process honored God, and the honey bee.