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NOV2003

Bee Culture



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This photo was taken at an outdoor show/sale in the Cincinnati area in early October. The bees were out in full force and kept landing on these 'flowers' to investigate and fly away. This bee, however, was persistent and searched for a long time, even crawling inside. Obviously, bees are not just attracted by scent as all of these flowers are entirely made of beads.

© Caren Cohen

Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

NOVEMBER 2003 VOLUME 131 NUMBER 11

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Without them, nobody knows you're there.

Ann Harman

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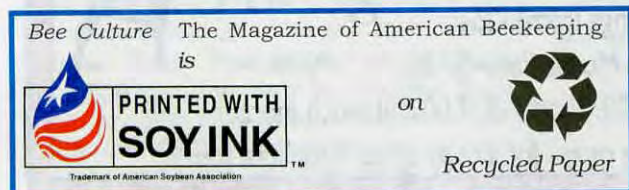
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From Our Authors . . .

Past & Present

Mark Winston

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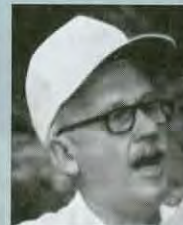
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Clarence Collison

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KEEP IN TOUCH

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Prep For Hard Winter

My boss will be putting Apistan strips on this week (mid-September). Last year when he set his bees for Winter he had two brood boxes that had enough honey – but in case of a hard Winter he left on one shallow super full of honey (two supers with one shallow over Winter).

Is this overkill? Or is it good preparation for a hard Winter?

It worked so well last year. Please let me know what you think of this plan.

Lois Lewis
St. Louis, MO

Editor's Note: Conventional wisdom says that the full deep (probably 50 or more pounds of honey) should be sufficient in your location. But the variables involved post some interesting situations. An early Fall, long periods of confinement during the Winter, and a long, cold, wet Spring – and that shallow of insurnace in March looks like a good investment. A late Fall, easy Winter with lots of flight days and an early, warm Spring and what do you do with a (probably crystallized) shallow of honey exposed to Apistan?

The frames don't fit in a (deep) nuc to feed a split, so they can't be used there next Spring. Letting the bees move up into the shallow in Spring gets brood, and darkened comb in your honey supers. Reversing so the shallow is below, or between the deeps

MAILBOX

so the bees move the honey reduces the likelihood of brood, but you're moving deeps, shallows and deeps again and again. If they don't move the honey and it sits half full, you're out an extra honey super for the flow. And the honey will probably crystallize in the comb, which gets ugly to deal with.

Too, honey is selling for \$1.50/lb. or more, so that shallow has a real value in the Fall, cash wise. Something like \$30 or so. Two or three are acceptable. 100 of these and you have to look hard at that investment.

Further, what kind of bees? Italian stock tend to raise more brood later and earlier than dark stock, thus the need for more food generally.

Management style, type of stock, economics and of course luck all play a role. Oh, and good records from several (easy and hard) years, queen source and production, and yard location will really help make your decision.

Honey Like

Your September cover for *Bee Culture* featuring a can of corn syrup is not far from reality.

This past weekend I went to Kentucky Fried Chicken. I asked for honey for biscuits and got something labeled "Colonel's Honey Sauce," which probably contains a minimum of honey. The ingredients are: high fructose corn syrup, sugar, honey, corn syrup,

natural flavor, and caramel color.

While the consistency was similar to honey, there was only a bland flavor which is probably desirable for a mass market. Since honey is the third ingredient, maybe there is so little you have to add natural flavor and caramel color.

Just thought you might be interested. Have a good day!

Ted Shylovsky
Sudbury, MA

Finding The Queen

Each Spring I make splits and sell nucs so I must find the queen in the donor colony.

After reading "Finding The Queen When You Must," September 2003, I noticed my method of finding the queen wasn't mentioned.

If I don't find the queen after my first inspection using an empty hive body and a nuc box to confine frame with the queen, I check again and return each frame back to the parent hive. I then move the hive about 10 feet away on another trailer and place an empty hive body and bottom board on the old location. Then I inspect two or three frames for the queen again. If I don't find her on these frames I shake the bees off, back into the hive. Then I put the frames without bees in the empty hive

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MAILBOX

body in the old location. Then I close both hives and go on to the next hive.

While I am working the next hive or two, the old bees will leave the old hive and return to the new hive at the old location. Thus reducing the number of bees to look through when searching again for the queen in the parent hive.

I feel there is less stress on the bees using this method. Less smoke and beating around. This also separates the young bees from the older field bees, making acceptance of a new queen easier with young bees. Just return the old queen to the old hive when located.

John Isenhower
Seaford, DE

Thank You

We appreciate the special obituary in remembrance of Homer that you published with such

expediency. We thank you very much.

We would also like to express our gratitude to the many kind friends who sent sympathy cards, phoned or visited us. Many cards came with a special handwritten note.

This outpouring of friendship was certainly heart warming and really helped us get through a difficult time.

We certainly want to express our thanks to every one of you.

Lois Park & family
Palo Cedro, CA

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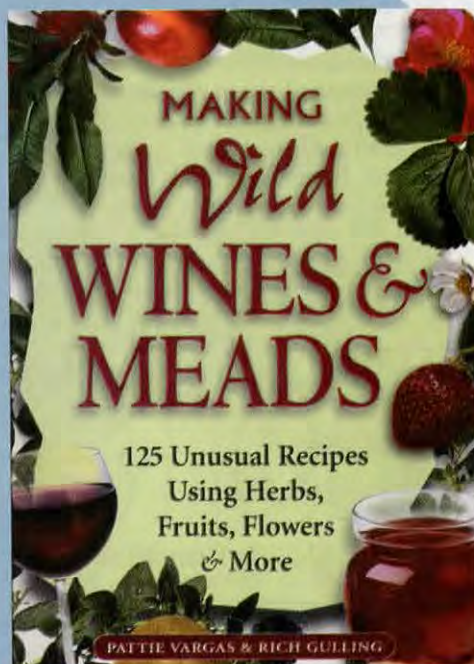
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INNER COVER

Every Summer, in Medina, we have the County Fair. It's a pretty typical County Fair. A midway for people less prone to motion sickness than I am, an exotic collection of mobile food vendors, commercial sellers in pipe-and-drape stands, and of course the animals.

Misfortune has visited twice in the recent past – a display steam engine malfunctioned and exploded,

leaving several dead and many injured, and an outbreak of illness traced to an onsite water source – has challenged the County, both in its sincere concern for those affected by these tragic events, and in keeping focused on the day to day operations of administering the business of the fair.

Necessary legal expenses, reduced attendance, and a significant increase in insurance costs have required the people who are financially responsible for the fair to tighten belts, raise prices, reduce some services and yet maintain a quality operation.

As you can imagine, it's been a difficult time for the fair. This year, with most of this past, good weather and more people staying home for vacations, attendance was up and revenue was better. But several years of being frugal are catching up, and, to give the fair board a financial shot in the arm, a pig roast and benefit auction was held by the friends of the fair.

Community businesses, especially those who are part of the fair each year contributed baskets of goodies, each a flavor of their part in the fair. The Medina County Beekeepers, for instance, gave two baskets with contributions from our members – candles, ornaments, various sizes, flavors, types and kinds of honey and cream and lotion products. There were many baskets donated to the auction, and the bidding was generous.

About 250 people came, which is a healthy number for a county our size. And, as you might suspect, unlike the fair itself, there were no spiked hair do's, leather pants, face jewelry, or tattoos in attendance. These, generally, are partakers of the fair, their friendship displayed only for large audiences of like-minded, and adorned, peers. There were, however, blue jeans, flannel shirts and work boots. And hats, with the front in front, that had seed company, tractor brands and local businesses proudly displayed.

Since this was the first time there was a bit of confusion but it ran on time, the food was hot and good, and the auctioneer entertaining. ("If you don't understand how this works, raise your hand" always get a laugh, and a bid.)

But here's what made this an extraordinary event. If you neglected to bring your checkbook, or enough cash, (they didn't have a credit card hook-up), and still wanted to take something home that night, they'd take your name, and you could come in *next week*, and pay for it. They knew you, after all, even if they didn't know who you were. They knew you because you were there. Because if you were good enough to help the fair, you were good on your word. What more did they need?

What more indeed. That the rest of life should be so simple.

We routinely do small reader surveys to check on how we're doing, and we systematically do larger surveys. Sometimes, we do really big surveys. Last month we did a really big survey. A census someone correctly said. Nearly so.

If you received one of these, I urge you to take the few minutes required to fill it out and return it to us. We didn't pick any one person specifically, but we did sample for geography and how long you've been a subscriber. All sorts of statistics and stuff (as Arnold so eloquently put it) were used to pick those who received the form (no, I don't have a clue who you are, the computer at the mailers, using our formula did the actual picking). So your opinion is important. It influences what and who you see on these pages each month, and what information we search for to offer each month.

Continued on Page 43

Earning Trust; Kinds of Meetings

NOVEMBER - REGIONAL HONEY PRICE REPORT



HARVEST WRAP-UP

We did a harvest wrap-up this month, checking on Spring build-up weather, early flows, rainfall and overall average yields for the season. Below we've compared prices this month to last month, and given the survey results, on average, for each region.

Region 1.

Bulk prices up, all the rest down a bit. Spring weather poor to just barely average for build-up, early flows average to down, too much rain gave average to above yield - 63 lbs.

Region 2.

Bulk down, all the rest steady since last month. Poor Spring weather, terrible early flows, wet, wet, wet all Summer - gave a yield for most at half or less than average.

Region 3.

Bulk and pails steady, wholesale and retail up a bit. Spring weather not too bad, but early flows not good, wet Summer gave about half average yield.

Region 4.

Bulk steady, pails down, wholesale and retail steady. Spring weather about right, as were early flows, but a wet Summer dropped yields about a third or so. Some did O.K. though.

Region 5.

Bulk and pail prices steady, retail up, wholesale steady. Good to average Spring gave, predictably, average early flows. Good, to almost too wet Summer gave pretty much above average yield.

Region 6.

Bulk and pail prices steady, retail and wholesale down. Messy Spring gave short early flows, but Summer was too wet, or too dry. Yields - good, or bad (half) depending.

Region 7.

Bulk up, pails down, wholesale and retail steady. Mostly bad Spring weather gave mostly average Spring flows, but too dry (south) and north gave poor yields (down 40-80 lbs.), and wet (central), gave average yields. Down overall.

Region 8.

Pails down, bulk, wholesale and retail steady. What an 'average' year - Spring weather and yields steady, Summer on the dry side gave average to slightly less overall crops (about 60 lbs.)

Region 9.

Prices steady across the board since last month. Spring weather about right for pretty good flows. Summer mostly dry for below average yields (down about 20 lbs.).

Region 10.

Pails up, bulk, wholesale and retail steady. Spring was mixed for weather and crops, but not too bad. Dry, dry, dry Summer gave half, or less average yield.

Region 11.

Bulk and pails steady, wholesale and retail up. Only average Spring weather gave about average early flows, but dry, dry, Summer dropped yields by more than half - into the 30s.

Region 12.

Bulk down, pails steady, wholesale and retail up. Spring weather mixed, but wetter than average gave good to poor flows. Dry, dry Summer, through, gave poor, poor yield overall.

	Reporting Regions												Summary		History		
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Yr.	
Extracted honey sold bulk to Packers or Processors																	
Wholesale Bulk																	
55 gal. Light	1.44	1.25	1.25	1.25	1.50	1.25	1.50	1.52	1.50	1.50	1.36	1.30	1.25-1.52	1.38	1.39	1.29	
55 gal. Amber	1.15	0.95	1.20	1.14	1.23	1.19	1.44	1.41	1.15	1.50	1.38	0.88	0.88-1.50	1.22	1.27	1.19	
60# Light (retail)	96.67	98.92	84.00	86.75	98.21	90.00	107.78	98.30	105.33	80.00	105.50	100.00	80.00-107.78	95.95	95.68	81.95	
60# Amber (retail)	91.50	92.58	95.10	84.80	95.10	81.00	105.25	93.33	100.00	87.50	101.67	84.50	81.00-105.25	92.69	90.08	75.44	
Wholesale Case Lots																	
1/2# 24's	39.07	37.38	34.31	36.06	34.31	36.50	34.70	34.31	44.00	35.76	25.00	46.82	25.00-46.82	36.52	34.28	30.72	
1# 24's	65.73	46.70	57.60	48.39	55.60	52.00	57.32	58.96	49.92	67.08	80.50	67.63	46.70-80.50	58.95	57.58	48.28	
2# 12's	63.50	41.39	55.20	46.75	59.32	43.00	51.95	54.00	50.40	55.92	36.00	59.76	36.00-63.50	51.43	51.16	43.06	
12 oz. Plas. 24's	41.24	43.58	54.00	39.50	43.15	48.00	45.85	46.56	42.96	47.76	56.75	50.64	39.50-56.75	46.67	45.10	38.82	
5# 6's	56.46	45.89	55.26	49.33	55.26	55.26	55.15	50.00	55.26	66.75	48.00	60.90	43.00-87.89	54.46	48.53	47.27	
Quarts 12's (NEW)	55.60	80.06	82.20	65.95	80.63	80.00	78.51	72.91	75.00	91.80	77.88	82.50	55.60-91.80	76.92	77.32	-	
Pints 12's (NEW)	38.00	45.68	54.60	40.24	44.46	44.00	41.74	37.88	43.33	60.06	27.00	54.00	27.00-60.06	44.25	45.96	-	
Retail Honey Prices																	
1/2#	2.35	2.06	2.43	2.12	1.89	3.25	2.12	2.29	2.69	2.67	2.14	2.89	1.89-3.25	2.41	2.42	1.99	
12 oz. Plastic	2.75	2.84	3.95	2.73	3.50	3.99	2.72	3.15	3.35	3.45	3.11	3.16	2.72-3.99	3.22	3.09	2.62	
1 lb. Glass	3.54	3.24	3.95	3.38	3.25	4.50	3.32	3.86	4.02	3.75	3.53	4.11	3.24-4.50	3.70	3.63	3.18	
2 lb. Glass	6.40	5.11	5.50	5.19	6.49	6.50	5.79	6.11	6.51	6.33	6.04	6.85	5.11-6.85	6.07	5.96	5.18	
Pint (NEW)	4.88	5.25	5.95	4.89	5.59	4.50	4.78	5.26	4.64	6.75	4.55	6.49	4.50-6.75	5.29	5.34	-	
Quart (NEW)	7.88	7.97	9.50	6.63	7.29	8.50	8.25	8.29	8.45	10.95	8.18	9.89	6.63-10.95	8.48	8.48	-	
5 lb. Glass	13.83	10.42	10.75	12.11	10.00	9.99	12.30	15.99	16.85	12.99	9.16	13.19	9.16-16.85	12.30	12.47	9.90	
1# Cream	3.94	4.31	4.36	4.30	4.36	3.45	3.65	4.08	4.30	4.97	4.80	4.04	3.45-4.97	4.21	4.34	4.00	
1# Comb	4.67	4.37	3.95	4.98	4.37	4.50	4.42	4.40	4.37	6.00	7.00	5.38	3.95-7.00	4.53	4.94	4.93	
Ross Round	4.50	4.03	3.59	4.85	4.90	4.50	4.60	4.50	4.90	5.15	5.44	4.75	3.59-5.44	4.64	4.59	4.23	
Wax (Light)	1.19	1.66	1.20	1.62	1.20	1.03	1.83	2.00	1.88	1.59	1.43	1.38	1.03-1.88	1.52	1.94	1.16	
Wax (Dark)	1.62	1.05	2.03	1.33	1.10	2.80	1.12	1.68	1.00	1.68	1.05	1.10	1.00-1.95	1.26	1.86	1.03	
Poll. Fee/Col.	48.33	41.00	36.50	37.50	32.50	40.00	45.14	40.00	32.00	47.51	24.00	36.50	24.00-48.33	38.42	40.67	39.05	

RESEARCH REVIEWED

Explaining • Defining • Using

Steve Sheppard

"Ladies, at the sound of the bell . . ."

In this column, there is not usually a hint of the process that leads to my choice of a particular topic or research paper for review. Whether it is by careful assessment of current interest in the beekeeping community or by some random process of grabbing a scientific journal and pointing my finger at something on the table of contents, the reader is left to wonder. However, the choice of topic for this month's column, a paper on queen fighting, comes directly from something that struck as a prophetic in an isolated mountain village in Kyrgyzstan. I write this in the village of Kyzyl-Kol, in the Tien Shan Mountains of Kyrgyzstan. This is a relatively remote village of 100 families accessible only after hours of driving unpaved tracks and crossing numerous bridges made of a few walnut logs laid across rivers and banded together by steel cables. No careless drivers could survive the route. As reminders, rusted car hulks can occasionally be seen on the downstream side of the bridge. The nearby steep slopes are covered with wild apple and walnut forests and the mountains themselves are the homeland of a number of other fruits we know well. Not surprisingly, a subspecies of honey bee, *Apis mellifera pomonella*, is also native to these mountains and the major reason for my presence here – but that is the subject of another story.

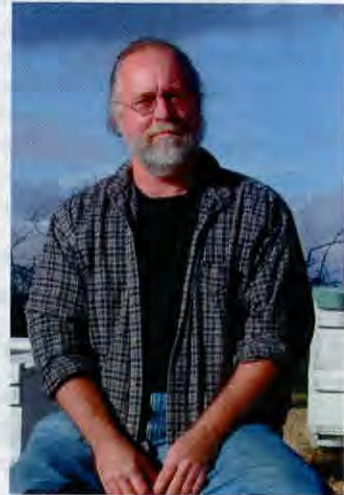
Knowing that I would be in Central Asia during the editorial deadline for this Research Reviewed column, I carried with me several scientific journals from which to select the paper for review. After reading through them I was still not quite sure which article to choose. While in mid-ponder on this heady issue one evening, my host came

into the room and invited me to sit with his family to watch the major television event – boxing from America. What? How can this be? Minutes later I was sitting on the floor with the rest of the family staring at a 1960s vintage black and white television that intermittently yielded a fuzzy Russian broadcast of the Shane Mosley and Oscar de la Hoya boxing match at the MGM Grande Hotel in Las Vegas, Nevada. No matter that the actual match took place some days or weeks earlier – it was still new to us. As the ringside commentary and beer advertisements were all in Russian (with local Kyrgyz language commentary in the immediate viewing room), I was left to reflect on the single English language portion that I heard in the broadcast. After the ringside announcer introduced the boxers, referee, representative of the Nevada boxing commission and the esteemed panel of judges, he started the match by proclaiming, "Gentlemen – at the sound of the bell, let's rock and roll!" That is when it came to me – of course – I'll write the column about an article I just read on virgin queen fighting.

The fighting that sometimes takes place between virgin queens in a honey bee colony following reproductive swarming was noted long ago by observers of honey bee behavior. In a recent paper by Pflugfelder and Koeniger (2003), the authors state that the question of what cues are used by queens to recognize each other and to release stinging behavior remains unanswered. In their paper they report a novel method to examine the fighting behavior of virgin queens under laboratory conditions and present the results of their own attempt to answer the question of virgin queen recognition cues.

In constructing a device that makes the boxing ring of the MGM grand look like a benign playground, the authors fabricated a fighting arena for the virgin queens from a circle of wire mesh mounted atop a light box. A piece of glass served as a roof and a small mesh tube provided an entrance. There was no way out. A video camera mounted above captured the action. The assay consisted placing a "test object" (queen (live or dead), parts of queen, worker, etc) inside the arena and then introducing the test queen via the tube. The event was recorded for three minutes and scored as positive (when stinging occurred) or negative.

The arena set up allowed the authors to control a number of parameters to clarify the nature of the stimulus that released stinging behavior. They were able to film under red light filters to evaluate whether the fighters needed light, to immobilize the test object queen by pinning or CO₂ narcosis to see if movement was needed, to separate the queens by a single screen mesh of different sizes or a double screen to test for the presence of a contact chemical releaser, to manipulate the test object queens such that only their abdomen or head protruded into the test arena to determine where such a chemical might



be found and finally, to use dissected dorsal abdominal integument from a queen placed on workers to see if the stinging behavior was truly elicited by that part alone.

Altogether, the authors used 1300 virgin queens in their experiments and tested a wide array of combinations. They caution in the Discussion section that complex factors at work within a beehive influence queen fighting, such as the relatedness of worker bees or indicators of queen "quality" While these factors were excluded from the arena tests, the authors were able to demonstrate that something localized within the dorsal abdominal integument of the queens appears to be what releases queens stinging behavior. The experiments that provided some of the strongest evidence included tests where workers wore a covering "garment" made from the upper abdominal integument of a virgin queen. In 46 out of 62 trials, the hapless "undercover" workers in the arena were stung by test queens. When workers were placed in the arena wearing similar coverings made from drone integument, they escaped such an ignoble

fate (12 out of 12 tests). The authors point out that the tergal glands are located in the upper abdominal integument of queens and other compounds known to be active in queen recognition to the workers are also produced there. However, tergal gland compounds identified to date are produced by the queens later in life than when they first emerge as virgins, so the authors concluded that the pheromone that releases stinging behavior is most likely an "unidentified component of the tergal gland secretion". While references to the welterweight world title in Las Vegas are purely tongue in cheek, from the standpoint of the replacement of queens and the ultimate survival of the colony - it is deadly serious business. **BC**

Pflugfelder, J. and N. Koeniger. 2003. Fight between virgin queens (*Apis mellifera*) is initiated by contact to the dorsal abdominal surface. *Apidologie*. 34:249-256.

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Mark Winston

TRAVELS WITH BEEKEEPERS

“These three wall hangings, a five-dollar bill, a plaque, and a quote, each remind me of the different layers of experience provided through my travels with beekeepers.”

I write in a tiny office at home, barely closet sized, without the luxury of space to accumulate stuff. In some perverse way the teeniness of my work environment has forced me to organize my thoughts sharply, and to rely on memory rather than stacks of reference material to inspire my writing.

My wall space is particularly sparse, and I have had to be highly selective in choosing the memories that look down upon me as I compose. Each carefully chosen plaque, drawing, or poster reminds me of a particular time and place, evoking a cascade of reminiscence from a lifetime of traveling to and from bees and beekeepers.

One of my fondest memories emerges from a framed five-dollar bill that hangs on my wall. It was not pay from my first teenage job as a fiberglass fabricator, nor was it my inaugural reimbursement from *Bee Culture*. The five-dollar bill is a keepsake from a trip to speak at the New Zealand beekeepers' annual convention in the early 1990's. This currency is special to me because it was signed by the world's most famous beekeeper, Sir Edmund Hillary, also known for being the first person to scale Mt. Everest along with his Sherpa guide Tenzing Norgay.

Hillary is an extraordinary human being, and he was a commercial beekeeper before heeding the call of the high mountains. He is a

national icon in New Zealand, venerated as much for his accomplishments as for his humble beginnings and still-humble demeanor. He was born into a beekeeping family, and he, his brother, and his father ran a successful beekeeping business while Sir Edmund gradually shifted his interests to mountain climbing.

He is universally esteemed in New Zealand, to the point that a rugged and handsome picture of young Hillary is on their five-dollar bill, with Everest in the background. Nevertheless, Sir Edmund hasn't forgotten his apicultural roots; he was the speaker at that year's banquet, and regaled the audience with tales of his early beekeeping days. Still, you could hear the catch in his voice as he shifted gears to talk about the draw of the mountains.

Hillary signed a five-dollar bill for me after his talk, and in our brief conversation we discussed how deeply we each felt about bees. His combined passion for bees and mountains came from that mystifying place inside where we feel the dual throb of nature and adventure. The framed five-dollar picture on my wall reminds me to value that link between beekeeping and the world that surrounds us.

Next to my signed Sir Edmund currency is a plaque I received during a trip to Australia, a plaque that also reminds me of nature, but in a different way. This trip was again to address beekeepers, the Apiarists Association of New South Wales, and the plaque on my wall evokes a cascade of remembrances.

My trip there began with an evening talk at 7:00 PM, but I was warned that I best be done by 7:55, because at 8:00 that evening the entire group of well over 100 beekeepers was adjourning next door to the pub to watch an important rugby match. Sure enough, the lively audience was intent and engaged in the talk until 7:55 sharp, when they rose en-masse and settled in to the pub with their pints of bitter and gargantuan steak dinners to cheer their home team on.

I joined the crowd, had a wonderful evening, but kept noticing a young woman at the fringes of the pub who was carrying a baby in a soft-looking pack slung across her chest. She, and her husband, were at the meeting the following morning, and I continued to see her throughout the week, always with the pack and its contents snuggled close.

I finally had a chance to meet her, and looked into her pack expecting to coo at her cute newborn infant. Well, there was a newborn inside, but it wasn't hers. It was a baby wallaby whose mother had been killed by an automobile while the baby was still living in her pouch.

Wallabies are small versions of kangaroos, and like kangaroos their babies require about nine months of full-time pouch time before emerging as infants to hop around on their own. The Australian beekeeper was taking the place of mommy's pouch until baby was

Continued on Next Page

“It was not pay from my first teenage job as a fiberglass fabricator, nor was it my inaugural reimbursement from *Bee Culture*.”

ready to come out. She kept the wallaby baby with her day and night, virtually never removing her from the pouch, and feeding her with a special bottle and formula.

That was odd enough, but as I got to know this couple better I discovered they were closer to “nature” than I thought. And I mean close; these two were nudist beekeepers, believing that the right way to keep bees was in the buff, even down to not wearing shoes. The woman made a special exemption for the wallaby pouch, but otherwise she and her husband kept bees as nature intended. Since bees don’t wear clothes, why should beekeepers?

I met quite a few other characters on this trip, including one octogenarian beekeeper I’ll call “Aussie” out of deference to his reputation. He was much-regaled at this meeting because his wife and his girlfriend had just each had a baby at virtually the same time, in the same hospital, across the corridor from each other.

“Aussie” had spent that day darting between wife and girlfriend until both babies were born. That night, perhaps overwhelmed by what he had just accomplished, Aussie jumped into his truck and drove a load of bees 800 kilometers into the bush to take advantage of a eucalyptus flow that was just beginning in the outback.

My walls also are adorned with remnants of my tropical years, spent chasing after killer bees in remote corners of Latin America. At the time I was tropically obsessed, wanting nothing more than to spend the rest of my days deep in any jungle absorbing the biological lessons that jump out from every vine and buttressed tree.

A friend from that era gave me a quotation from the great Swedish botanist Linnaeus, who named the honey bee *Apis mellifera*. She calligraphied his words on to a piece of parchment for me, and today it

hangs framed on my office wall in the prime spot next to my computer: “*Man DWELLS naturally within the tropics and lives on the fruit of the palm tree. He EXISTS in other parts of the world and there makes shift to feed on corn and beast.*”

I keep that quote closest because it reminds me that too often those who make shift to feed on corn and beast have overwhelmed those who live on the fruit of the palm. It was an El Salvadorian beekeeper who made me see the difference between the tropics as I wanted them to be and the reality of many tropical habitats for those who dwell within or near their diminishing splendor.

I had just finished my Ph.D., and was spending a few months of 1979 slowly traveling down through Central America to conduct a survey of beekeeping prior to the arrival of Africanized bees. I wrote ahead to a name someone had provided, (I’ll call him “Jefe”), and in his reply he promised to take me out into the country to see some beekeepers.

I naively appeared at the address he gave me early one morning, and to my surprise discovered that my contact was not a beekeeper but a honey exporter, and not a regular guy but the head of one of the “200 families” that corruptly ruled El Salvador at that time. Even worse, there was horrific guerilla warfare going on in the countryside, and because of his stature we had to travel in a heavily armed convoy consisting of reinforced SUV’s and enough armament to hold off a small army of attackers.

On our trip up-country we hit a roadblock, and the sound of his guards locking and loading was not the pristine jungle sounds I had come to El Salvador to hear. The cause of the roadblock quickly became obvious; there were three headless corpses lying in the road, with heads off to the side.

We passed on without incident, and soon arrived at his finca, the country estate where his beekeepers lived and worked. We went out to one of his nearby apiaries accompanied by the head beekeeper, and Jefe told me to inspect the bees and tell him whether his beekeepers were doing a good job.

The bees were a disaster, rife with disease, many colonies queenless, and all obviously in need of some better beekeeping. I looked over at the campesino beekeeper, and the look we exchanged remains seared in my memory. It spoke of his terror at being uncovered, of his good intentions but poor training, and of the dire consequences possible from what I might say to Jefe.

I praised his bees, complimented Jefe on his good judgement in hiring such an astute and hard-working beekeeper, and quietly made a few suggestions to the campesino beekeeper on simple ways to improve the colonies.

We soon returned to the capital city. I cut short the rest of my El Salvador itinerary, and fled the next day for the then-calmer country of Panama.

These three wall hangings, a five-dollar bill, a plaque, and a quote, each remind me of the different layers of experience provided through my travels with beekeepers. Some trips have been inspiring, thrilling me with the splendor of nature and the insights bees bring to our lives. Others have exposed the quirky eccentricities and odd habits of my fellow beekeepers, and brought an appreciation for the myriad and wonderful human beings who share our craft. And, a few trips have been terrifying, peeling away my own naiveté and exposing the darker side of our human experience.

It may be a tiny office, but it is full of memories and enlightenment, expanding to encompass the wisdom, humor, and foibles of beekeepers I have been privileged to meet. To my hosts and friends around the world, my gratitude for sharing so much. I have kept close my recollections of your hospitality and kindness, and it is those memories I cherish most of all. **BC**

Mark Winston is a Professor at Simon Fraser University, Burnaby, B.C. Canada.

Computer Programs For The Beekeeper



Malcolm T. Sanford

"There's more out there than you know"

Periodically I am asked if there are any computer programs for beekeepers. There are too many to fully review here. They come in various flavors from the "killer application," electronic mail, simply called "e-mail," to stand-alone applications and those that can be accessed and used on the Internet through the World Wide Web. I distribute my Apis newsletter via e-mail.¹ A first place to look for electronic beekeeping information of any kind using the World Wide Web (a computer application of its own) is to access the Beehoo directory.² There is a specific listing there for software that can be used in a number of ways and also is avail-

able in different languages

French speakers will want to check out the program called Apilogic, ver-

my good friend in southwest



sion 5.02, developed by Gilles Ratia of Apiservices France.³ I will not review it here as it is only available in French, but after only a little study even in a foreign language, the potential for use in a variety of situations from in-depth record keeping to statistical models is apparent.

The Beeaware program developed by Penn State University and the Maarec (Mid-Atlantic Apiculture Research and Extension Consortium) continues to get better and better.⁴ "BeeAware is a CD-ROM packed with information on honey bee management, accompanied by hundreds of high-quality images and illustrations. Included on this CD is detailed information on honey bee biology, starting new colonies, beekeeping equipment, seasonal management, pollination, queen management, and detailed information on the identification and management of diseases, pests and parasites. Additional information includes the references used to make the system, a list of all apiary inspectors in the U.S. and Canada, and a glossary of all the techni-

cal terms used in the system. A unique feature of *BeeAware* is an interactive diagnostic module designed to assist beekeepers in identifying unknown problems in their colonies. This module was recently rebuilt using *NetWeaver*, an efficient knowledge base construction, maintenance, documentation, and debugging tool written at Penn State University." The program is available for \$50 by sending a check or money order to: BeeAware, Dept. of Entomology, 501 ASI Building, University Park, PA 16802, phone 814-865-1896.

Mynista in Alberta, Canada has both a hobby (150 hives or less) and professional software application available.⁵ The software tracks queens, production, supplemental feeding and weather and notes. "The Hive Test Results form is a list of the locations with the individual hives, showing tests done and the results of those tests. The table includes fields such as number of mites, percentage of infestation, and level of infestation. The filter helps narrow down the information by the location, hive, test done, results, or by date. Reports can also be printed from the table." The company is also developing its "nomad" version,

which can be used on hand held or so-called "palm" computers. Trial versions are available via CD ROM or Web download that can be used prior to purchase. The hobby version costs \$95 and the professional one \$286.

The EDBI foundation has both tracking software (Bidata) and a pollen database available through its Web site.⁶ The tracking software is continually being updated (Version 6.0 is now available) and there will soon be a version out for "palm" computers. There is a lot of information on this Web site and it could take quite some time to download one or both programs. For 10 Euros, it is recommended that one order the CD-ROM, which, includes a free 20 hive-edition plus a lot of other material, including the pollen database,



1. http://groups.yahoo.com/group/Apis_Newsletter/

2. <http://www.beehoo.com/>

3. http://www.apiculture.com/apiservices/index_fr.htm

4. <http://maarec.cas.psu.edu/beeaware/index.html>

5. <http://www.mynista.com/beekeeper/>

6. <http://apimo.dk/index.htm>

more than 500 megabytes of information in total. The Bidata program is also available in several languages.

The Carl Hayden Tucson Bee Laboratory's⁷ Web site (Gears) advertises several computer applications. Certainly the price is right. They are free. "VarroaPop simulates the growth of *Varroa* mite populations in honey bee colonies. The program demonstrates how *Varroa* mites influence colony population growth throughout the year. You can change many factors through the menus in the model such as the initial population size, queen egg laying potential, and mite reproduction rates, so you can see how these factors influence both colony and mite population growth. We hope that the model will help you understand the interactions between the honey bee and mite populations and provide insights on how best to control *Varroa* in colonies."

BK-Economics is a software package that was developed by a team of scientists at the Carl Hayden Bee Research Center in Tucson, Arizona to assist commercial beekeepers in streamlining their business practices. This software allows beekeepers to simulate years of business, taking into account factors like equipment purchases, labor force, transportation, marketing strategies, loans, honey flow, and other hive products without taking the usual risks. This software, when used in combination with the marketing strategy information in publication, can help beekeepers formulate a successful business plan when making financial decisions, expanding an operation or just starting out." Both programs can be downloaded from the Web site or can be requested by mail.

The specialized program Redapol is also available from the Tucson Web site. It is a computer-based model simulating the interactions of weather, bloom and honey bee foraging activity that culminate in 'Delicious' apple fruit-set. The model predicts the percentage of blossoms setting fruit based upon weather conditions, orchard design, tree characteristics, and honey bee colonies per hectare. Other applications are found at the Web site that can be used interactively with an Internet connection. These include the "pollination

7. <http://gears.tucson.ars.ag.gov>



Honey bees genetically altered for self preservation.

bible," last published in 1976 by S.E. McGregor, *Insect Pollination of Cultivated Crop Plants*. This is the "first and only virtual beekeeping book updated continuously." Then there is Web Bee Pop that simulates how honey bee population dynamics depends on the weather. Five different climatic regions can be selected. Finally, the site provides a down and dirty look at the structure of bees as viewed through a scanning microscope, the electronic version of *A Scanning Electron Microscope Atlas of the Honey Bee*, by Eric Erickson and colleagues, reproduced with permission of the Iowa University Press.

I cannot end this short column on computer possibilities without mentioning my Apis Information Resource Center.⁸ Here one can sign up for a free beekeeping information and peruse information for sale both in English and Spanish in both HTML and HTML help formats.

As the digital age matures, there are bound to be more and more computer programs available to beekeepers. Fortunately, it will not be difficult to find most of them using the power of the Internet and World Wide Web. **BC**

Dr. Sanford is a former Extension Specialist in apiculture at the University of Florida. He publishes the APIS newsletter, api.shorturl.com.

8. <http://apis.shorturl.com>

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Home Spun Honey

The Wonder Years

Susan Cookson Rice

For years, my daughter has watched her father and I don our bee suits and trek out to the hives for an inspection or harvest. But this year, thanks to Grandma and her wonderful sewing machine, our four-year-old trooper slipped into her own suit and proudly walked up to the hives. Full of questions and wonder, the educational journey had begun.

Lauren's beautiful brown eyes were open wide and as round as golf balls. They seemed motionless in their gaze at the hive entrance. She gradually crouched down to get a closer look at the hustle and bustle of the bees' activity. However, her mind was in high gear and her mouth was speeding straight ahead. "Why are they all going inside and then flying back out? What are those yellow spots on them? Can I open it up and see the queen? Why is there only one queen? I must be a big girl now. I have a beesuit!"

Not sure which question to answer first, I explained that without the queen, there would be no hive. There would be no baby bees to keep it going.

"Who takes care of the babies? Can I see a baby bee? Are they cute?"

I opened my mouth to answer again, but was not given time to speak. She was not interested in my explanation of larvae or worker bees or pollen. And who is to say if baby bees are cute or not? Luckily for me, Lauren had all the answers anyway:

"Well, you see, Mom, the queen bee is the boss of all the bees. She has all the babies and loves each one of them very much. They are all special. She feeds them honey and teaches them how to make honey for us. The other bees do what the queen asks, because she is in charge. She sits in a big chair and they bring her whatever she wants, sometimes candy. She tells them

where to get honey and where to put it so she can feed it to her babies.

"There's a king bee too. He does something, but I forgot what he does. But he could take care of the baby bees if he had to.

"Everybody knows the queen because she has a red dot on her. That's how all the other bees know she is the queen. All the bees are going to fly inside now because it is night-night time. The queen is going to tuck them in and give each one of them a kiss goodnight. She's very busy and takes real good care of her babies. They all love her."

Ah, so she loves her babies just like I love you?

"Well, kind of, but it's different, Mom. They aren't people, you know. They are bees."

Oh, of course. I knew that.

She watched a little longer as the bees flew in and out of their homes. Her story continued:

"They are dancing down there because they are having a bee party. They have bee parties every week to celebrate the queen's birthday. She is like a princess, except that she is a queen. The 'hmm-hmm' sound is special music that's just for queens and other bees at the party. They invite all the other bees over and they eat honey and then have a sleep over. May I have a sleepover with the bees? I would like to have a sleepover, but they might sting me. My bees are my friends. My bees don't have stingers. It's good to have bees without stingers, you know."

Yes, that would be nice.

"Can I have some honey?"

Now that was a question I had expected. We walked toward the barn, where I had some frames of honey that had been pulled earlier that day. On our way, she discussed with me the star thistle that was growing on our property. Lauren listened intently as I explained that

we used to mow it all down, but now we don't. The bees like it and it makes good honey, so we let some of it stay. She agreed, noting that it was worth having stickers around if it meant happy bees.

Once in the barn, together we scraped the comb - chock-full of sweet blackberry, star thistle and wildflower honey - into a Lauren-sized bowl, where we could watch as it leisurely dripped through the filter and into the lower bowl. Only one word came to those amazingly motionless little lips as she watched the slow current of natural honey trickle down at the pace of gravity. "Cool!"

I placed a section of foundation on a platter and handed my precious daughter a spoon. As before, she did not need any instruction from me. She glided the spoon along the foundation to fill the utensil to the brim. Then the contents were placed with deliberate ceremony into her little mouth. With eyes that sparkled with delight and a smile that said "Mmm," my polite little girl called out in earnest, "Thank you, bees!"

Learning begins with wonder. Wonder has no age limit. At age four, Lauren wonders at the bees and creates her own fascinating reality, amazingly paralleling the truth. I encourage you to take your little ones to visit beehives. You won't learn about the latest medication or a good way to market honey, but you'll marvel once again at the bees' dance, the queen's royalty, and the sweet taste of your first honey from the comb. **BC**



Is Agritourism In Your Future?

Bob Harrison

This past June my wife and I attended an agritourism conference put on by the state of Missouri Department of Agriculture. The state of Missouri had gone all out. Free coffee, donuts and free admission plus a catered meal at lunch time.

Most of the events the Missouri Department of Agriculture does involve fees. The USDA believes Agritourism is going to become very popular and is only at present in its infancy. I, like most of the attendees was curious about the many aspects of Agritourism. At the end of the day all my questions had been answered.

Throughout the day many people spoke about the way they practiced Agritourism at their location and how it had saved the family farm. I was amazed at the similarities between family farms and the commercial beekeeper.

Beekeeping is part of agriculture, and I like that. My business is run from my small family farm and orchard in an agriculture zone. For miles in any direction I could not run another kind of business as the zoning is (at present time) only for agriculture. Many rules, which apply to other businesses, do not apply to agriculture businesses.

Although many farmers and ranchers have tried for years to attract paying visitors it was not until the 1980's that the Agritourism effort gained momentum and generated widespread use of the name Agritourism.

The conference touched on all aspects of Agritourism. If you checked I would not be surprised if Agritourism is not being promoted today in most states. Attending an Agritourism conference would be a wise move in my opinion if you think

might benefit your beekeeping operation. Even a hobby beekeeper considering Agritourism might see the benefit of combining beekeeping demonstrations etc. into a pumpkin patch (or other type of) Agritourism business.

The same problems which are eliminating the family farms from the United States are eliminating many commercial beekeeping and sideline operations. There's been a brief reprieve with the recent spike in honey prices and higher pollination fees. I expect pollination fees will remain high due to the supply shortage coming from the beekeeper side. This is because many commercial beekeepers have been forced out of business from the low price of foreign honey. Before the price spike last year for bulk honey we lost four large commercial beekeeping operations in Missouri. The oldest spanned three generations and was started in 1926.

The United States Department of Agriculture reported Missouri lost 1,000 farms and 100,000 acres of farmland in 2002. Unfortunately, this does not tell the whole story. Most farms are small and about 60% had sales below \$10,000. About 60% of the farms were supported by off-farm income, and about 55% of all farms list some occupation other than farming as their main source of income.

These conditions are sad because America has many of the best and best-equipped farmers and beekeepers in the world. These conditions are causing many farmers (and possibly now beekeepers) to consider Agritourism as a source of income.


At the conference it was reported that many business people,



who never lived on a farm, are starting agritourism businesses and making plenty of money plus gaining a very enjoyable lifestyle.

Many old farms are sitting idle which could draw Agritourism. A trip to the local farm auction provides the inexpensive equipment and a trip to the local sale barn provides the animals. A subscription to *Mother Earth* or *Small Farm Today* magazine plus buying a few back issues provides most of the necessary information to be successful.

A trip to a beekeeping auction and a few hives is all that might be needed to include beekeeping in the Agritourism scheme of things. A friend of mine runs a roadside orchard on a busy highway. He has built his honey house right into the sales area but put the entrance on the other side of his large building. Inside, you can see the beekeeper uncapping and extracting honey and spinning and bottling honey. This has become a very popular attraction for his business. Although he only runs around ten hives to pollinate his nine-acre orchard you can quickly see the added value to his business from customers interested in the things the beekeeper does.



He never however, actually lets the people enter the processing area.

Osage Honey Farms, the largest beekeeping operation in the Kansas City area since 1955, was set up for tours when it was built. George Vanarsdall saw beekeeping Agritourism as a valuable asset and built his honey-processing area with large glass windows so tours could file by without encountering live bees and watch the operation. Almost every person attending school in the Kansas City area has toured the Osage Honey Farms operation on a school tour. A huge void was created when they recently closed their tours. A sign on the door said they closed because they simply were unable to compete with the low price of foreign honey. Many American Beekeeping Federation members will remember touring the Osage Honey Farm operation when the ABF fifty-year anniversary convention was held in Kansas City. If the current high honey prices had come a year earlier perhaps the four commercial operations which closed their doors in Missouri would still be in operation.

Typically (as was the case with Osage Honey Farms) beekeepers have given tours for free. Why? Many of the speakers at the Agritourism conference asked, why provide the service for free? People today expect to pay to learn *and* to be entertained. Most of us have big hearts, but when you provide a service it is only smart business to cover the costs of employees and facilities, and make a reasonable profit. People are simply willing to pay a reasonable fee for a tour of a honey farm. What seems boring to you might be of great interest to many.

People are willing to pay to see the way honey is extracted, look at an observation hive and yes even take

a peek at those stacks of supers and drums.

I was approached by the local school district about doing tours. The school district was deeply saddened by the loss of Osage Honey Farms to the community for tours. They said they would have been glad to pay a small fee to help the honey farm survive. In fact they were surprised that a small fee was not charged as floors had to be cleaned after tours on a rainy day, the restrooms cleaned and other extra work involved. The district said around 20,00 to 30,000 children could be bused to tour the honey farm a year. The district felt between \$1 to \$3. per child was fair. The teachers and parents would supervise and the school district would provide busing. The average tour would be three busses of around 40 children and last about an hour. The reason I bring up the above example is because all areas of the U.S have school districts, which want to provide tours of interest to the children.

I have watched many commercial beekeeping operations close their doors and have researched the reasons why. You simply can not keep bees today like grandfather did. To survive you have to be able to change and adapt as necessary. Those unable to change or deal with mites and low honey prices have simply closed their doors. Being able to adapt to an ever-changing beekeeping world is the key to survival.

Could beekeeping Agritourism be of benefit? Each situation is different. I am considering Agritourism myself because there is a need within my community, supers are not getting any lighter, our honey crop is pitiful this year and Agritourism sounds like fun if you enjoy talking about bees and beekeeping to people. If you *do not* enjoy talking to people I doubt beekeeping Agritourism would work for you. I always tell people if you are getting into beekeeping for the money, you better look other places as beekeeping (and all of agricul-

ture) is a hard lifestyle to make a living.

Organic food was once considered a product from a small local farmer. According to the USDA, organic food sales topped \$9 billion in 2001 and big business has changed the focus on the farm again.

Agritourism is both under developed and under marketed.

Many of the Agritourism presenters said that the more they provide for visitors to do the larger their market is and the greater their profits. What was once only a pumpkin field has grown into a major festival

drawing people from numerous communities, enjoying a variety of events, all in one place.

What was once a fruit stand now has flowers, crafts and opportunities to pet animals and see the actual growing of the fruit.



Many, if not most, Apple Orchards are using Agritourism to keep from going bankrupt due to the competition from cheap foreign apples. Many are making and selling both apple butter and apple cider for added value. Several of the apple orchards we pollinate told us they could not survive on wholesale sales of apples alone like they did twenty to thirty years ago.

Most beekeeping Agritourism business would be run in the beekeeping off-season, I suspect.

All tours would be booked in advance. Package your tour with other agritourism business tours in your area. The people would tour, as an example, to the apple orchard, pumpkin patch and the beekeeping operation.

A catered food service could provide dinner (included in tour price) at one of the locations.



A pumpkin, small box of apples and jar of honey could be included in the tour price creating sales for all the businesses.

Conventions in your area are ready customers. Religious groups and many other groups are always looking for trips for the group to do. Retired baby boomers are always looking for places of interest and to spend money.

Check with conference planners and get on their mailing list.

Things to consider when thinking of getting involved with Agritourism:

- "Understanding the market is essential for sustained success," said Glenn Weaver a conference presenter.
- The large retail businesses will always be able to buy and sell at prices you cannot afford to sell, but they cannot provide the experiences.
- Beekeeping has the resources to attract visitors and provide visitors with great experiences.

These experiences can be developed around the history associated with beekeeping and the heritage of beekeeping.

Any of the chores associated with beekeeping or beekeeping practices can be developed into experiences for visitors.

Demonstrations of making equipment, assembling equipment, explaining the extracting of honey, working the hive, through available large pictures or from a actual Observation hive, candle making, pollen collection, propolis collection, loading and unloading of hives and equipment, storage facilities, use of beekeeping protection equipment such as bee suit, gloves, hive tool and smoker. The list goes on and on and on.

A single attraction, however, does not usually have the power to draw tourists that a variety of attractions will. One outlet store will not draw visitors like fifty outlet stores in a mall. Fifty stores create a critical mass of things to see and do, so tourists will drive 50 - 100 miles to spend the day.

Normally no single product or attraction would motivate a family to drive 200 miles to see someone

explain beekeeping. But they do come by the thousands for a *package* of experiences. Through development of areas of interest in your own beekeeping business and by working with other tourism businesses in your area, you can create that critical mass of things to see which will motivate visitors to come from greater distances to your place of business.

Don't simply say it won't work at my place. Check out the possibilities, the advantages, the costs and where your next dollar is coming from first. **EC**

Bob Harrison is a commercial beekeeper from Odessa, MO. He is an occasional contributor to these pages.

Information Sources for Agritourism
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Alternative Technology Transfer for
Rural Acres (A.T.T.R.A.)
www.attra.org 800-346-9140

Technical Assistance for Agritourism
Technical help with taxes & registration business owners toolkit
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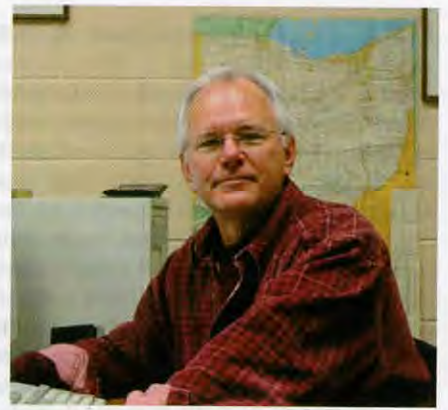
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Reflecting On Past Contributions



One more month – one more article

James E. Tew

It's a classic day for writing a bee article. It's still Autumn for me; the leaves have just begun to change. It's raining and the rain sounds are being punctuated with the distant rumble of thunder – just a Fall shower.

I have been writing articles for bee magazines on days like this for nearly 30 years. I don't even have copies of all of my articles. There is no "complete set" available – as if anyone wanted one. I estimate that I have written about 200 – 250 articles. Though deadlines are relentless, I have not grown tired of pecking them out. What can I tell from all these past articles? Can I see trends that I could not see as I was writing them? Can I tell where bee things are going? Answering my own questions – I can tell you that except for mite and pest worries and our greatly increased use of plastics, not much has changed in beekeeping. I can see no trends in beekeeping past nor beekeeping's future. I don't think that's necessarily a bad thing. We still worry about honey crops.

We still relentlessly look for the best queen – and we have not found her. We try to control swarming and we worry about our industry's numbers. Interestingly, the most profound change that I have experienced in writing for you is "how I write for you."

In my early years, I had to make original photos, convert them to black and white and submit a 5x7 for use in the article. As my confidence grew, I was able to submit typed drafts. Occasionally I saved an "onion skin" draft for my files. Now everything is computerized and I absolutely love it. I would not want to return to the old Royal typewriter days for anything – and I love digital photography just as much. Does all this make my writing any better? No, it just lets me be more tardy in submitting my drafts to my editors.

My earliest years

In September, 1976, I wrote my very first official bee article for *The American Bee Journal*. Honestly, at that time in my life, I didn't know a lot about bees, so I wrote something I knew more about at the time – paint. I grew up working in my Dad's paint sales business so I wrote an authoritative, action-packed article – *Paint – A Vital Protective Film*¹. I remember it as though it were yesterday. After all these years, I was able to find the original slide and have represented it here for



My first photo in my first article.

you for the first time since it was shown in 1976. I can now put it in color through it was black and white in the original article. It is still an exciting photo (grins) Rather than money, Dadant paid me with a copy of John Free's *Insect Pollination of Crops*, a book costing about \$15.00 at the time, and a book which I still have today in my bee book library. As I was searching through my old photos, I came across one of me that was taken during the time I wrote my first

article. I don't think I have changed all that much. Compare the photo with the one on page 24 in the mast head and tell me what you think.

My editors

At *Bee Culture*, through the years, I have worked with editors Larry Goltz, Mark Bruner, John Root and for all the these past years, I have worked closely with Kim Flottum, the present editor. At the *American Bee Journal*, for my entire career, I have worked with Joe Graham. I don't have any editorial complaints with any of these people. They always have wanted practical and

¹ Tew, James E. 1976. Paint, A Vital Protective Film. American Bee Journal. Vol 116 (9) Page 424 and 430

clearly written beekeeping information. (I'm not sure that this piece will meet those requirements.) I have actually enjoyed working for all of them.

My articles

As I look through the back articles of which I do have copies, I note that I have leaned toward the practical "how-to" subjects. I have written numerous pieces on swarming and queen production, but in general, I note that I have not been much of a biology writer.

An early series I did was *Beekeeping Technology*. I went through such topics as a building a hydraulic pollen patty press, honey extracting systems, and building a polariscope. A technician I had at the time had some art skills so I briefly had original drawings rather than photos.

At the time, I was the coordinator of the Commercial Beekeeping Technology program at Ohio State's Agricultural Technical Institute. Not due to me, but rather to the students who participated, it was a high class beekeeping training program. For a while, students came from around the world to matriculate. Due primarily to ever increasing tuition costs, the program was phased out in the early '80s and I was changed to extension and research, responsibilities I hold until this day. I still get frequent requests for enrollment information for the commercial beekeeping program, a program that has not been offered for nearly 20 years.

It was during these teaching years that I wrote articles on our migratory beekeeping trips to Florida. This was one of a short series of articles that the oldest amongst you seem to remember the most frequently. I was a much younger man then and these long rides hauling bees to Florida was a adventure. I documented muddy fields, stuck trucks, and stinging occurrences. During this time, writing articles was easy. Nearly everything I did was a potential article. Below, I show an old black and white photo of a stuck truck with a load of hot, confined bees. It was a bad day that day.

"The Solitary Beekeeper"

As my program changed from a teaching program to extension and research, the students stopped coming. I went from having abundant, albeit marginal, help to nearly no help. My beekeeping exploits changed in response. I began to have to keep bees with no help other than my own. Then editor of *Bee Culture*, Mark Bruner, suggested I write a series of articles under the general title, "*The Solitary Beekeeper*" in which I would review my efforts to keep 60-70 hives with essentially no help. During that series, I remember writing a piece about an evening hive move when I got spooked. I was moving colonies onto university property near a mental hospital. As I worked, everything became very still. All the raucous night sounds stopped and I felt that I was being watched. Every move I made seemed to be exceptionally noisy. My flashlight gave off a paltry light. I tried to keep working, but finally gave in to my spook. A heavy dew had fallen and my truck would not pull the partially loaded trailer. I remember getting back out of my truck, in the wee hours of the morning, and un-

hitching the trailer – all the while feeling like I was in some B-grade horror movie. I abandoned the trailer and the bees and returned the next day to find everything in order. Nothing happened. I just got spooked and I wrote about it.

Ironically, several of those 40-50 colonies had American Foulbrood. I didn't know it at the time and I wrote subsequent articles on their slow death and various things I tried to in order to get things back under control. Bottom line? I essentially killed diseased bees and burned diseased equipment.

"Not in Any Book"

What is now becoming many years ago, Editor Kim suggested I write a frank series under the general heading, "*Not in Any Book*." Essentially, it was to be real beekeeping experiences and address sometimes pica-yune details that were rarely covered in general articles. Beekeeping writing generally seems to present beekeeping in a perfect light – as though everything always goes well. As I have said in previous articles, *confession is good for the soul, but terrible for the reputation*. Even so, I have always tried to be honest and list my faults and problems along with the occasional success. "*Why My Spring was not Perfect*," "*Downsizing your Hive's Population*," and "*Problem Packages – What to do when things don't go right*," were typical titles during that time.



J. Tew, circa 1976. I can't explain the bee in my mouth.

"Bee Culture's Beeyard"

It would make no difference if I wrote the greatest piece ever if there were no beekeepers to read it. Much of my work has been directed toward finding new beekeepers and helping them get started once they were interested in our craft. I negotiated with Editor Kim to let me start a yard, from scratch, and develop it. Judging from your responses, this was one of the most rewarding series I have ever done. I had things go right and wrong. I dutifully wrote about all of them (After all,



A load of hot bees on a stuck truck.

I needed 1600 words per month to make an article of it.) After about three years, the yard was up and running and was, from that point, an established yard. I sensed that the "this is a new yard" concept was passing so I reluctantly let the topic go – at least for the present. For those who recall the recent series, the yard is still alive and well and has appeared in subsequent articles but not under the "Beeyard" heading.

Beekeeping Past and Beekeeping Gone

I have thousands of photos (prints, slides, digital, and video). I have been occasionally saddened to look at some old randomly taken slide and see people who

were once prominent beekeepers and are now gone – many of them passed away. I am made melancholy when I look at photographic pieces I have of bee supply companies that no longer supply bee equipment. At the time the photos were taken, it seemed as things would go on forever, but nothing does. We still have excellent beekeepers and excellent bee supply companies, but I still miss some of the old names. I suppose it is a sign of my aging.

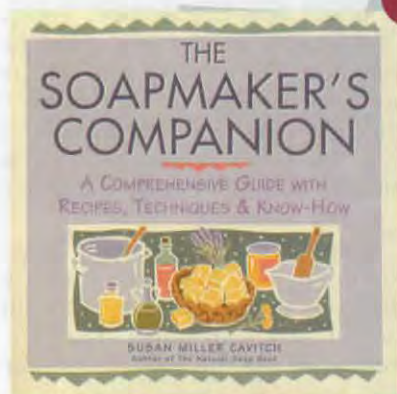
Everything Changes

Everything changes. Even in beekeeping, things don't stay exactly the same. While I have a reservoir of old bee articles and photos, every article should not be something from the past so I require constant new experiences and new photos – even video and web page addresses. Presently, Editor Kim and I are discussing new directions for new beekeeping events that are presented in changed formats. Stand by.

So why this piece? This past September marked my 25th year at Ohio State University and my 35th year in beekeeping. It sounds as though I am quitting something but, no, I have no plans to quit – either writing or my university job, but a look back every now and then is not a bad thing. I looked back. **BC**

Dr. James E. Tew, State Specialist, Beekeeping, The Ohio State University, Wooster, OH 44691, 330.263.3684, Tew.1@osu.edu.

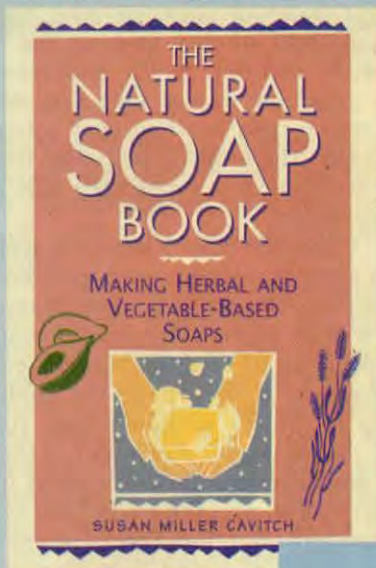
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EVILS OF THE DOUBLE DEEP DOUBLE DEEP

We believe that the double deep is the worst possible choice of Wintering configurations for the southeast.

Walt Wright

It is true that honey bees much prefer to rear brood on the larger expense of comb provided by deep frames. It's as close as they can get to the continuous comb of the wild brood nest in the tree hollow. But a choice of two deeps to prepare the Winter brood nest is one too many. They do not want the Winter brood nest spanning the gap in functional comb between the two deeps. So they have to decide, before brood nest closeout in the Fall, which to use. In my area the choice is about 50/50. Half the colonies choose the lower, and half elect to Winter in the upper hive body. Occasionally, a colony will straddle the decision fence and wind up going into Winter with a cluster two or three frames wide and two stories high. This produces an inefficient Winter cluster shape, but is probably better than selecting one or the other of the two hive bodies.

In the double deep, during the white wax flow, (i.e. the main honey flow where you are) the colony stores Winter rations. They often treat the gap in functional comb between deeps as the dividing line between stores. Some will fill the upper with capped honey, and some will fill the lower with pollen. This pushes the brood into the other box. In both cases the brood nest is competing with Winter stores for space. This restricts brood nest expansion in the Fall when they need to be rearing young bees for Wintering.

Several features of their normal preparations for Wintering do not get much press in the literature. First, they literally fatten up for Wintering. Large amounts of pollen are consumed in late Fall/early Win-

ter by the bees expecting to Winter. Pollen is consumed to enlarge internal fat bodies for Wintering.

Second, they want to Winter over open cell liquid feed in the center of the cluster. The liquid feed can be uncured honey, nectar, or a combination of the two. This liquid feed is placed there after the last brood emerges in the Fall. The cluster feeds on this in early Winter, freeing up cells for mid-Winter brood rearing. The northern literature infers that empty cells are deliberately left unfilled to aid insulation properties of the cluster shell. A live bee in a cell is presumed to be a better insulator than trapped air space. Without getting into a discussion of the R factor of a bee, end to end, in an empty cell, I come to a different conclusion. There was still brood in those cells when field nectar and/or flying weather ran out. In the southeast, the only time we see bees upended in empty cells is when that colony starved. *The properly-prepared Winter brood nest has no empty cells in early Winter.*

Third, the colony wants to scale the cluster volume or population going into Winter to be proportional to Winter stores. The colony must strike a happy medium between two extremes. If they have too many bees for stores available, they run the risk of Winter starvation. If they do not have enough bees, build up will be slow, and the colony will not meet reproduction requirements. The timing of brood nest closeout in the Fall reflects this characteristic. Those with ample bees stop brood rearing earlier. Those with fewer bees will often extend brood

rearing into hard freeze weather, and fail to get their brood nest prepared for Winter.

And last, during the brood nest reduction of the white wax flow, the brood nest is reduced from both top and bottom. The top is compressed by capped honey and the bottom is raised with Wintering pollen. Brood feed pollen is generally maintained at the sides. In the hollow tree, with a continuous slab of comb from top to bottom, the brood nest is free to float up or down with brood feed in immediate contact with the brood. Not so in the managed hive. The colony's distaste for the break in functional comb often causes them to get it done poorly. The colony that errs in pollen placement on the main flow is stuck with it going into Fall brood nest preparation. Pollen is not readily moved and must be consumed. The experts who tell us that hive design is "optimized" didn't get that from the bees who use it. The break in functional comb seriously disrupts colony judgment on stores location.

A specific error in colony judgment created by hive design affects pollen placement. Most colonies fill a deep frame with brood. Their inclination to use the whole frame for brood seems to override their natural tendency to maintain feed pollen at the bottom of the brood nest. If rearing brood in the bottom deep during the white wax flow, the brood nest is often not raised with Wintering pollen. This leaves the Wintering cluster dependent on Fall feed pollen at the sides of the brood nest. The cluster will often migrate to one side or the other to enfold that pollen frame.

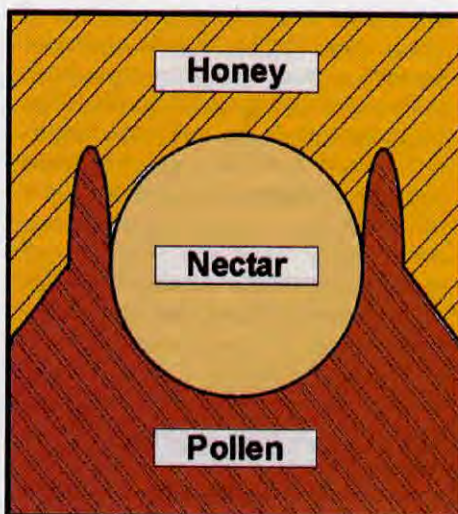
At the risk of boring the reader beyond endurance, we want to pursue the evils of the double deep a bit further. If you recognize that your production season starts in the preceding Fall, you will be patient. We believe that the double deep is the worst possible choice of Wintering configurations for the southeast. A single deep and feed box shallow, or three intermediates is better. Although the double deep is the standard for a large area of the United States, it gives the bees problems in the Fall. They do not want to have their Winter cluster span the gap in functional comb of about an inch and a half between hive bodies. That is exactly where they would like to have their cluster, but for the gap. They want to have the cluster located between honey stores above and pollen stores below. If both pollen and honey are enclosed in the cluster, mid Winter brood rearing gets off to a good start.

In the southeast, the colony does not generally move up by consumption of honey in the Winter. Those that opt to Winter in the lower hive body, and forage availability supports proper brood nest preparation, over Winter in the lower. Upward movement is limited to *expansion* of the brood nest in late Winter/early Spring. In late Winter they will expand the brood nest laterally, frame to frame, until the lower box is filled with brood. Only then will they jump the fearsome gap to rear brood in the upper. They will continue to maintain brood in the lower while expanding the brood nest into the upper.

It is a popular misconception that the colony moves up by consumption of honey in the Winter. If we can believe Dr. Farrar's sketches from Wisconsin (you might consider that Northern) bees do not move up there either. They stretch the cluster to maintain contact with both pollen stores in the bottom deep and overhead honey. This causes a tall narrow brood nest as they consume into the top of the three deeps. Like our bees, it's not so much "moving up" as expanding upward. This might sound like nit picking, but there is a point to be made when discussing the effects of the double deep. In the double

deep, in late Fall/early Winter the colony that has not prepared the brood nest for Wintering in the lower relocates the whole cluster into the upper on solid capped honey. They move up, but they didn't eat their way into the upper. Dissatisfied with empty cells in the cluster, they relocated all at once.

The colony that fills the upper hive body with capped honey during the "main flow" in early Summer automatically is rearing brood in the lower. Conversely, the colony that filled the lower with pollen is rearing brood in the top chamber. Where pollen is concerned, "filled" is not accurate. It would be more accurate to say there is some pollen in all cells (perhaps less than half a brood cell depth). It is obviously stored for



Box hive early winter stores location.

the long term because it is ugly with honey glazing. Current feed pollen is generally filled near the top of cells and is dry, retaining its bright colors.

Back to where we were headed: Locally, the colony that has all its brood in either chamber will generally get that chamber properly prepared for Winter, and Winter there. The colony that has brood in both chambers at the end of the white wax flow must decide which one to prepare for Wintering. Since they have cut back on brood production, they will often have random frames of brood and pollen in both boxes. There is no well-defined brood nest. No matter which hive body they choose, the brood volume is com-

peting with stores volume to rear young bees for Winter.

The worst-case scenario is the colony faced with the decision that opts to use the bottom box for a brood nest. They have a tendency to want brood below honey stores. They make this choice in late Summer, as the Fall flow is starting. There is already substantial pollen in the bottom box when the decision is made. This complicates consolidating the brood nest. Then, in late Fall/early Winter, when consumption of pollen increases for the "fattening up" process, that colony is uncomfortable with their situation. If they fail to fill the brood nest with nectar, they panic, and move the cluster up into the upper hive body of solid capped honey. Located over solid capped honey, the Winter brood rearing is slowed, getting them off to a poor start for the following season. Consumption of honey (with increased cell depth) is much slower than nectar at brood rearing depth. In addition, there was no deliberate pollen stored in the upper for midwinter brood rearing. The colony with the same circumstances in early Fall that chooses to Winter in the upper, and prepare it well, will Winter better. There was feed pollen at the sides through brood nest closeout. Pollen in the lower supported the fattening up process.

We did have one season locally in recent years that looked like the bees had spent the Fall in the far north. Brood nests were completely empty in late Fall. Some had a smattering of nectar in outside brood frames. They had extended brood rearing later than normal or the Fall flow ended earlier than normal. Clusters higher than expected in the hive called my attention to the problem. Some had already moved up on solid capped honey. Wholesale feeding filled their brood nests before full time clustering started. When their brood nest was filled, they moved back down. They all Wintered well.

As a side note, we found it interesting how the colonies applied the feed provided. They started at the top and filled downward all the way across the brood nest. After 1½ gallons, the top half of the brood

Continued on Next Page

nest was full and the bottom half had none. Most used three gallons to fill the brood nest. A deep frame of brood comb will hold about a half gallon. That's the reason the literature recommends you think in terms of gallons if feeding is required.

Those of you that experience Winter conditions (it snows there) might consider an investigation to see what your double deep is doing to your bees. If, on your last hive opening in the Fall, the cluster is normally in the bottom, and in the Spring, normally in the top, check the concept of 'moving up by consumption.' Open a couple of hives in the middle of December. There should be very little consumption of honey at that point in the season. Consumption of honey accelerates after the honey at that point in the season. You might be surprised to find the cluster already in the top box, and the bottom box already "empty."

In summary, the colony does not need a break in functional comb right where they would like to have their Winter cluster. If they had continuous comb the size of a double deep, the early Winter brood

nest would look something like the figure. The pollen peaks at the sides are Fall feed pollen, perhaps encapsulated under honey/nectar. The rounded brood nest on continuous comb would be squarish on Langstroth frames. To avoid the problem for the bees in the Fall, a single hive body in the center between two other boxes works better. The details will be provided in a separate article, but you can already see why. The colony preference for rearing brood in the deep takes away the indecision caused by the break in functional comb, and Fall stores location supports mid Winter brood rearing.

When the beekeeping community abandoned the jumbo hive body of yesteryear, in favor of the Langstroth, they did the bees a disservice. The colony could put everything they needed in the one box of the jumbo. The big square of deeper frames could accommodate both pollen and honey for Wintering. The least we can do for our little friends is to make amends by giving them Langstroth boxes that confuse them less. **BC**

Walt Wright is a sideline beekeeper at his home in Elkton, Tennessee.

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Queen Rearing At Its Best

MARKETING BORED

Jim Fischer

"Got Milk?"
"Beef. It's What's For Dinner."
"Behold The Power Of Cheese."

"Honey..." ummm, uh... I dunno...

Hey! Wait a second - I'm a beekeeper, and I don't know what the snappy saying is for honey. Do we even have a snappy saying? If not, why not?

The votes have been counted from this summer's Honey Board referendum, and a majority of those who pay assessments on domestic and imported honey voted to continue the National Honey Board.

But regardless of if you voted, or how you voted if you voted, did your vote matter?

Apparently, not at all.

Producers of other foods have been crowding the courthouses, subjecting their own marketing boards to what can only be called "the death of a thousand paper cuts" in lawsuits that will decide the fate of the National Honey Board, regardless of what beekeepers, honey packers, or honey importers want.

The Cattlemen's Beef About The Beef Board

In July, the U.S. Court of Appeals for the 8th Circuit refused to overturn a lower court's decision that it was unconstitutional for ranchers to be forced to pay fees for marketing programs. The ranchers complained that forcing them to pay for marketing campaigns and commercials violated their First Amendment rights.

"Wait a moment," you may be thinking. "Doesn't the First Amendment PROTECT speech?"

Yes, it does, but it also protects your right to not have words put in your mouth by someone else. The cattlemen felt that they were "compelled to speak" by being forced to pay for promotions that they might not like, or might not agree were effective.

The USDA argued that the assessments were constitutional because the ads were "government speech," but the court ground that claim into hamburger, saying:

[The cattlemen] "in the present case are challenging the government's authority to compel them to support speech with which they personally disagree. Such compulsion is a form of 'government interference with private speech,' not the government speaking for itself."

The Court went on to rule that the Beef Board was dead meat:

"No remaining aspects of the [Beef Marketing] Act can survive when the 'principal object' of the Beef Act [the promotional campaign] is the very part that makes it unconstitutional."

But the ranchers still have to pay \$1-per-head assessments until further notice, because the Eighth Circuit granted a "stay" of its own ruling until the U.S. Supreme Court can decide if it wants to review the ruling. Other courts of appeal have ruled that other commodity assessment programs are constitutional, so the USDA will certainly appeal the ruling to the U.S. Supreme Court.

And this is where it starts to

get really bizarre - the USDA is fighting to keep the commodity programs, since they feel obligated to represent the interests of producers who support the beef promotion program. At the same time, the USDA's new "food pyramid," which replaces the old "four food groups," tells people to eat less red meat.

To summarize, our tax dollars are being spent by the USDA to both defend the promotion of beef using music by Aaron Copeland, and at the same time to warn people to eat less beef. Suddenly, the explanation that the USDA simply "forgot" to fund the bee labs in their last budget seems slightly less incredible.

To summarize the summary, the only unifying theme is that there IS no unifying theme. That's gotta cost more.

But the cattlemen were not presenting a new argument, they were quoting the U.S. Supreme Court's opinion about the Mushroom marketing board.

Not Much Room For Mushrooms

In 2001, the U.S. Supreme Court ruled that forcing mushroom growers to pay for generic mushroom advertisements violated the First Amendment by compelling growers to pay for "speech" that some of the growers did not like. The court said, in its ruling on "USDA vs. United Foods":

"First Amendment values are at serious risk if the government can

Continued on Next Page

compel a particular citizen, or a discrete group of citizens, to pay special subsidies for speech on the side that it favors. Just as the First Amendment may prevent the government from prohibiting speech, the First Amendment may prevent the government from... compelling certain individuals to pay subsidies for speech to which they object."

Mandatory assessments now only fund mushroom *research*. (I will refrain from making a joke about mushroom research to avoid retaliatory jokes about bee research from the mushroom growers, so the reader should insert his or her own favorite mushroom joke here.)

Voluntary contributions are solicited to fund promotional activities, so while promotion continues, those who do not agree

"A board that promotes, but does not regulate the commodity or its producers cannot impose mandatory assessments."

with the promotional effort need not contribute.

Shades Of Difference Under the Fruit Trees

The mushroom decision did not instantly render all commodity board mandatory assessments unconstitutional. In 1997, the U.S. Supreme Court ruled that the mandatory assessments of the California Tree Fruit Board (nectarines, plums and peaches) did not violate the First Amendment rights of growers. A major reason was inept oral arguments presented by a lawyer whose specialty is employment law in Fresno, CA. The growers' case could have been presented by Michael McConnell, one of the leading First Amendment scholars in the USA, but both lawyers wanted the honor of presenting the case to the Supreme Court, so the question of which attorney would argue the case for the growers was decided by a coin flip. Why the mushroom-grower clients did not choose the advocate to present the case remains a mystery.

The other reason why the assessments were constitutional

was that the promotion was only one part of a much broader set of activities funded by the assessments, including a quality control program that set standards for things like fruit maturity and minimum sizes for fruit.

Bad Apples

Not all the lawsuits were filed by angry producers. There was one case where a marketing board sued producers. But this was a very "friendly" lawsuit. The board promised to pay the legal fees for the producers they sued. The Washington Apple Commission got two growers to agree to be "defendants" in a case and pretend to be "unwilling" to pay the assessment, all so a court could rule in favor of the marketing board. One of the growers was even a former Chairman of the Commission, but somehow, the

judge did not throw the case out as an attempt to perpetrate a fraud upon the court.

The Apple Commission's little scheme backfired. Other growers, who felt that their 25 cents per 42-pound box of apples (\$22 million a year total) was not being spent wisely, turned the lawsuit into a class action suit, and got the case moved from county court to federal court. They asked for a refund of all assessments paid since the suit was filed, and also asked that all current and future assessments be placed into escrow pending a final court ruling.

In August, the court accepted a settlement proposal that cuts the 25 cent assessment per box of apples to 3.5 cents. (Let this be a lesson to anyone who thinks that climbing the courthouse steps is anything other than a last resort, or that any legal action can ever be a "sure thing.")

"Got Milk," or Got Milked?

The 12 biggest commodity boards together collect nearly \$700 million in assessments per year. In contrast, the California Raisin Marketing Board, known for their

singing and dancing raisins, made those dancing raisins famous for a mere \$40 million a year.

Admit it - you're humming "Heard It Though The Grapevine" aren't you? And you are smiling too, I bet. You are likely thinking "Gee, I LIKE those little raisin guys!" You are not alone - a recent survey by the Raisin Board found that about 49 percent of those polled still remember the raisins fondly, and more importantly, remember that they are CALIFORNIA raisins. Results like that have a way of raising expectations, don't they?

But how did a small bunch of grape growers in one state create a more memorable promotional program than all the rest of the promotion programs put together? Just to make us even more envious, they promoted CALIFORNIA raisins, not imported raisins, not even raisins from another state.

Most important of all, you have not seen any of the raisin ads since the 1990s. The marketing board that was responsible for the dancing raisins was disbanded, and a new board was established after a period without any marketing board.

The singing and dancing raisins were such a success, they even made a cash profit from "merchandising." They generated about \$200 million in revenue from toys, coffee mugs, tee shirts, and such. There was even a Saturday-morning children's television program featuring the raisins. That's right, the "logo" made big money all by itself. Promoting the crop was better than free.

But here's a sobering thought - when they stopped advertising, raisin sales shriveled more than the raisins themselves, from 200,000 tons in 1994 to 174,000 tons in 1998.

Now they have a new raisin board, funded by growers who will pay a \$20-per-ton assessment. This will give them a budget of about \$4 million total, half of which is allocated for advertising. Clearly, the raisins will be back soon, but there may not be enough money to buy them new dancing shoes.

Up To Our You-Know-What In Alligators

Alligators? Yes, alligators. (Sometimes, these articles just

write themselves!) The Louisiana Department of Wildlife and Fisheries decided one day that alligator products needed to be promoted, so they imposed state-level mandatory assessments, presumably to convince people to buy more alligator shoes, alligator handbags, and alligator-skin luggage. The opponents promptly made some photocopies of the First Amendment complaints from the other marketing board cases, and the circuit court judge stopped laughing just long enough to rule:

"The undersigned admits to a certain degree of difficulty in maintaining an appropriately straight judicial face while attempting to apply the Supreme Court precepts that explain the simple language of the First Amendment to the alligator advertising program at issue here. When important constitutional issues must be resolved by a determination of whether an alligator is more like a mushroom than a peach, then in the words of Justice Thomas: 'Surely we have lost our way.'"

So, Alligators, a protected species for years, now also appear to also have the constitutional protection of the First Amendment.

The AHPA's Suit

The American Honey Producers are pressing exactly the same argument as other producers, but are still in the "preliminary administrative" phase, where they are required to submit their grievances to a USDA Administrative Law judge. The entire "First Amendment issue" will likely be decided in the other cases long before the AHPA gets anywhere near any federal courthouse.

The "free speech" argument has been raised 14 times in suits against nine different USDA agricultural promotion programs (almonds, beef, plums, dairy, mushrooms, pork, tree fruits, watermelons, and honey). The arguments have taken place in five different federal circuit courts. Two cases have been reviewed by the U.S. Supreme Court, and one case was reviewed by the California Supreme Court. Two cases (including the Honey Board suit) are still in in USDA administrative

adjudication.

In all these cases, the USDA has argued that mandatory assessments for advertising and promotion are constitutional as long as the ads are nonpolitical and individual producers were not restricted in their own advertising.

The distinction set by the Supreme Court rulings between the fruit and mushroom programs are clear. ***A board that promotes, but does not regulate the commodity or its producers cannot impose mandatory assessments.***

Since the Honey Board *does not regulate* the industry or set quality standards, the precedent set by the mushroom decision would appear to apply directly to the question of mandatory assessments for honey promotion.

The Tyranny Of Which Minority?

Don't expect the USDA Agricultural Marketing Service to concede that mandatory assessments are unenforceable. They likely feel obligated to defend each existing program to the best of their ability and feel that by doing so, they are serving the majority of producers and importers who support the promotion efforts.

But was the "majority" a majority of producers? Put another way, what would the USDA do if money was withheld by some packers and handlers, and diverted to an ad agency instructed to promote U.S.-produced honey rather than generic honey? Would the USDA sue? If they did, it would only result in an earlier court date for presentation of a "friend of the court" brief from the AHPA's lawyers questioning the constitutionality of the assessments.

What can we say about all this?

It seems reasonable to conclude that:

- 1) It pays to advertise.
- 2) It really pays to advertise when other people are doing most (or all) of the paying.
- 3) It doesn't pay to advertise if you promote your direct competitor's products with your money.
- 4) One good ad agency is worth more than a dozen commodity marketing boards, and costs only 1/20th as much.
- 5) "Free speech" includes the right

to not be forced to pay for a lame promotional effort.

6) Lawsuits are no more predictable than a coin flip, even when both plaintiff and defendant agree on the intended outcome ahead of time.

7) The USDA may continue the fight to promote honey and the other "commodities" all the way to the Supreme Court, but at the same time, they will continue to warn in their food pyramid literature "No specific serving size is given for the fats, oils, and sweets group because the message is USE SPARINGLY" Gee, thanks guys!

8) Suddenly, making peace with the packers and importers on the issue of promotion should seem much easier than making peace with the USDA. Let's try to replace the current "zero-sum death grip" with a simple handshake, OK?

9) For a few million dollars a year, we should at least have a snappy slogan. Heck, send your ideas to this magazine, and the big winner gets a **five-year subscription**. Note that neither approach uses a single dime of my money, so I will like whatever results.*

10) When you stop advertising, your sales go down. **BC**

James Fischer keeps unassessed bees in the mountains of Virginia, and hopes that any slogan developed for honey has better grammar than "Got Milk?"

*Send as many slogans as you wish on a postcard (if the writing is so small we can't read it, we won't) to: Honey Slogan, 623 W. Liberty Street, Medina, OH 44256.

January 1, 2004 we'll sort out the duplicates (earliest postmark), study them late into the night and publish the top 10 in the February (maybe March, or even April if we get lots) 2004 issue. Then, everybody votes for the best (2 and 3 get a one-year free subscription). There'll be no copyright, patent or other foolishness connected to this (soon-to-be) excellent marketing tool. Send in *your* slogans today! Get your friends to send in theirs too. Have everybody in your club send in some. Call people. Send emails. The more we have, the better the final choice. Do it today!

MORE

Backwards Beekeeping

I owe a huge debt to *Varroa*

Charles Martin Simon

My article *Principles of Beekeeping Backwards*, that appeared in *Bee Culture*, July 2001, received so much attention I felt like some kind of celebrity, which isn't good. The article was eventually archived on the internet at <http://beesource.com>. Fortunately, not everybody who wrote likes me. Some insinuated that I might be crazy. Interesting, since I ended the article with "I am crazy, and proud of it." Well, hopefully, this article will dispel any doubts and give them more reasons to like me even less. And that'll be good.

Celebrity was never my intention. In fact, I harbor antipathy for the celebrity system. When a friend became the apicultural advisor for a Hollywood movie that was not as stupid as some and stupider than others and got rave reviews and wasn't even about bees although there were some bees in it, at first I thought, uh-oh. And then, although still apprehensive, yeah, well, maybe okay, it's bringing attention to the bees. But later I had to ask myself, is attention something we who care about bees want or need? I worried that he would become contaminated by the contact with the Hollywood types. And I was very happy to see him

come out of it without any detectable damage.

Celebrities strut and fret and pontificate upon politics and foreign policy as though they actually know what's going on. I figure that's to compensate for their impotent insignificance, for who knows better than they the utter hopelessness



The Best frame in the world.

of popularity and money? They maintain enclaves of support for each other, their Malibus and Beverly Hills, their fancy parties and Academy Awards, they have to, otherwise they'd blow away like so much fluff. But it's all empty, empty and useless as a dead queen bee's desiccated husk.

However, the other day I did find a meaningful use for a dead queen's

husk. It was on a swarm-removal call. The bees were located on the ground, tangled up in ivy and boards, in a narrow space behind a garage, and a good four feet in from the opening. There was no way to get a box to them, and because they were so entwined in the vegetation and wood, there was no way to scoop them either. Plus, I couldn't move anything without the risk of crushing bees and maybe the queen. So, certain it wasn't going to work but needing to do something, I positioned the beehive on the ground up against the opening, meanwhile trying out in my mind the various excuses I might use for why I couldn't get the job done.

To think I had responded to the call with such professional elan. "A swarm? On the ground behind the garage? Sure, no problem. We do it all the time." It sounded like it couldn't be easier over the phone, but it was going to be embarrassing.

Then something I didn't expect happened. The bees closest to the box - remember, it was four feet away - perked up with recognition of the hive and started marching toward it, and crawled right in, with the rest of the swarm following. Large numbers were executing the

Continued on Next Page

Nasanov maneuver on the landing board, and it wasn't long before they were all in, well, the usual 99% anyway. I was about to screen it shut and call it good when some of them came running back out with confused looks on their faces. I lit up the smoker and chased them back in, but they wouldn't stay. As soon as I stopped the smoke, back out they would come. I figured the queen must not be in there.

I squeezed into the space behind the garage as carefully as I could, looked around and spotted a few bees clustered partially obscured by some leaves. I smoked them but they wouldn't move. I pushed them around with my index finger, and, just as I suspected, there she was: the queen. She hadn't joined the march to the box because she was dead.

Meanwhile, back at the hive body, there was confusion on the landing board, with more and more bees leaving. I took the tiny carcass

"If you're a bee person, there's nothing more pathetic than a dead beeyard."

and flicked it into the entrance. Then the bees started nasanoving with renewed vigor and running into the hive and staying. Bees flying around the area relating to where the swarm had been, changed course and beelined it in. I screened it up, took it to one of my yards, and mixed it with a queen-right hive. So empty husks can be useful sometimes, although I haven't figured out any use for celebrities yet, other than as simple-minded entertainment after a hard day's work, watching them jump around like monkeys relaxes me, otherwise they do provide convenient receptacles for my innate hatred.

Find the lowest of the low street person, and celebrities are lower than that. At least street people belong on the street, but the celebrities truly don't belong anywhere. That I have unwittingly become one and in an industry so much more important than the entertainment or politics industries is a source of great humiliation for me. No longer can I walk around like an ordinary

apiculturist and tend my bees in the peaceful bliss of anonymity. Now I have to look over my shoulder for beekeepers sneaking up on me trying to steal my secrets.

And I do have secrets. And it's such a burden. To free myself from the need to protect them, I am going to reveal them here. I'm going to come clean, as it were. Well, not completely clean. There are some I will not reveal since my livelihood depends on them. I'll take those to the grave, unless I am graced with a comely apprentice to whom I can hand them down in the proper, traditional procedure. Forgive me for that.

The Great Blessing of Varroa

Yes, I mean it, although it took all these years and so much loss for me to begin to understand. Because of the *Varroa*, the other day I found the best bee frame in the world. As some of you may know, I've been in the bee frame business, invented and sold world-wide the Super Unfoundation Frame, and I

take frames very seriously. So saying I found the best frame in the world is, for me, saying something big. This is a frame that is superior both technically and aesthetically. Why? For one thing, because it's free. I found it in my rotten-equipment pile.

A free bee frame is a terrible thing to waste. But more important than its recycled aspect, it's free because it has evolved by virtue of the process of deterioration beyond the rules and restrictions of conventional, non-free bee frames, even those of my own design and construction. Yes, with the recognition of this particular frame, I have even surpassed myself.

And, it is precisely to the *Varroa* that I owe the finding of this frame and the implications thereof. Ten or 12 years ago, when the dreaded parasite came into *my* yards – finally, after years of hearing it was coming – and started destroying *my* bees, I was distraught, naturally. Every Spring, I'd start with swarms that would build beautifully only to die

off in the Winters. I would find myself working in dead bee yards, cleaning and organizing equipment that should have been abuzz with bee life but was silent. More than disheartening, it was painful. I wondered why I was even going on with it, when some of my most stalwart compadres, even the great Ormand Aebi (World Record holder in the Guinness Book of Records for over 10 years for the most honey produced by a single hive with a single queen in a single season – a record that was only broken with the use of multiple queens, a true single-queen record which is not likely to ever be even seriously challenged), the most stalwart of them all, had quit.

Every year I felt more foolish and became more despondent. And, of course, without the bees to keep it alive over the Winters, the equipment was rotting at a greatly accelerated rate.

I couldn't bring myself to replace it. I calculated that if, under the circumstances, I would continue to replace equipment "as needed," I could literally be destroyed by the very beekeeping that was such a great love in my life. And it kept getting worse. Now I know for sure that had I made the investments necessary to keep up acceptable appearances, I would not have made it to this point.

I, as did most beekeepers, cursed the *Varroa*. I jumped through all the hoops, conventional and unconventional, and nothing worked. Even when there wasn't anything to do, I continued working in the yards, cleaning and organizing equipment that was more and more rotted-out and useless.

If you're a bee person, there is nothing more pathetic than a dead bee yard. The moaning of the wind through vacant bee boxes is one of the most heart-wrenching sounds you're ever going to hear. Beekeeping had turned into the opposite of everything I was in it for. I had to quit, I wanted to quit, but I didn't know how. There were spaces and times in my life that were slotted for bee work. There was nothing else I could do. But the only thing that was alive and growing was my junk pile. I burned an incredible amount of equipment over the years and still had a mountain left.

Then, a few hives started surviving the winters. Then a few more. My removal business was growing, and I was getting more and more swarms in the springs. Meanwhile, my lifetime interest in health had turned into another business, and I shifted my focus from honey to pollen, and I started getting great harvests, even though most of the bees were still dying off in the Winters.

But I needed to take another step philosophically. I shifted concept from "my" bees to "the" bees, and "the" bees to "my" bees. It was a natural not an intellectually conceived move, since, after all, most of the bees I was dealing with were feral. I brought the principles of wild bees into my beekeeping.

My frames (SuperUnfoundation) had been a step in the right direction, but as such had been limited in that they had not completed all the steps. If they had, I'd have no doubt gotten "there" a long time ago. But as it went, I am only getting "there" which is "here" "now." You don't have to understand; it's philosophy.

Now the bees that are not my bees are my bees. I have expanded to embrace them all. And since they're all mine anyway, no loss is too great, no gain too small. It's finally all working.

And as stated, I owe a huge debt of gratitude to the *Varroa*, without which none of this would have been possible.

By "this" I mean perfect beekeeping. Because that's what it has become, perfect.

And one of the greatest contributions for which the dirty rotten little parasite is directly responsible is in taking out of the game those players who shouldn't be in it any longer, and discouraging those who might otherwise have become beekeepers from entering in the first place - meaning specifically those who have not grasped how to go with Nature, those who solve problems by attacking them, those who attempt to beat Nature and make maximum profits. But don't feel bad,

it wasn't that long ago that I too used to think it was about honey, and that honey was money. But let's face it, if it was about honey, we'd be "honey-makers" not "beekeepers." But we're beekeepers, so it's about keeping bees.

From a human supremacy (a delusion that is destined to prove untenable) standpoint, bees dying, at the agency of *Varroa* or whatever, is a bad thing, but the insect mind doesn't work like that, doesn't share human values. The more bees die, the more they live. I don't expect you humans to understand that either, because you base all your science and philosophy upon your own desires. And when you die, you're done. Too bad for you.



And the last attributes of the best bee frame in the world: ease of use, effectiveness, durability. This frame has it all. Actually it is only a partial frame, the bottom bar and part of a side bar having rotted completely away. So it's not really a frame at all, but what is left is excellent indeed.

The Beauty of Bad Equipment

I went to college to study agriculture and dropped out because the agriculture they were teaching was not the agriculture I wanted to learn, and became part of an organic farm in the mid-Sixties. The land came with a nice yard of 25 perfectly-cosmetized beehives organized in extremely straight rows and two dilapidated hives off to one side. Anyway, it wasn't long before thieves came in the night with a big

truck and stole all 25 of the "good" hives.

The partners called an emergency meeting, during which it was decided that I should take over the two beehives that were left; none of the others being interested in bees at all. And that's how I got into it - with those two unstolen hives. With the help of one of the "partners" and somewhat more than a modicum of stinging, I managed to get them moved to my section and set about to learn about them.

Now, 35 years later, I have come full circle, from knowing nothing about apiculture, to knowing a lot, to knowing nothing, from bad equipment to the best equipment back to bad equipment.

The most obvious benefit of bad equipment, then, is that thieves are less likely to steal it. If it looks bad, they won't want it. And if it falls apart when they go to lift it, so much the better. Note: In this regard, it's a good idea to not staple the bottom boards to the hive bodies.

Thieves are slaves of illusions; that's why they're thieves. They have perverted values. Honey is money, for example. But what is money? And you still hear some old-timers talk about "robbing the bees," and I suppose that's correct in their cases because that's what they're doing.

But theft-proofing is far from the only benefit of bad equipment. For some strange reason, it seems bees prefer it. They have an affinity for rotten wood. Enough has been written about keeping newly hived swarms from absconding that it is apparently a common problem. There are many tips, such as placing the hive in the shade, not unscreening until almost or after dark, or leaving them in all night and unscreening the following morning.

The beekeepers who have this problem must be the guys with the new foundation and new and freshly-painted hives. I've never once had an abscond with old equipment, except when a swarm was

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queenless. Let me tell you, if after you hive a swarm, you hear the buzz of a queenright colony, there's no way you could drive that swarm from that box.

Bees like holes in unapproved places.

They like surprises. I once watched several bees taking turns dancing on a nail sticking out of an old hive near the entrance. A bee would grab on to the nail with her forelegs and then spin around it for a while, while a group stood around and watched. Then she would let go and be replaced by another one. This went on for nearly an hour, our time. You might say they were trying to remove it. But why? Because it offended their sense of order? And why right then, after it had been there for years? I don't think they were trying to remove it. I think they were having fun with it.

With bad equipment, you can't beat the price, or, I should say, cost. Bad equipment saved me from going under.

Then there's the issue of aesthetics. As I gleaned through my junk pile year after year, it became harder and harder to just burn it. The dead stuff was the only live stuff left. I'd look at a piece, rotted, crooked, mouse-eaten, wax moth larvae-eaten, and think, there's a lot of life left in that still. Even beyond that, I'd think the piece had never been so alive. I'd better keep it. And I'd throw it onto a second pile, which I was developing for potentially reusable bits and pieces.

Nevertheless, my mind was still clinging to the overbearing image of clean, painted hives and straight clean combs, even though I knew very well from long ago there is no objective standard of beauty. I once went out with a Playboy Bunny, and, believe me, she was not beautiful.

But the power of brainwash persists in overcoming reason and logic. Even though I knew better, I still wanted to see neat hives in neat rows containing only pristine frames and combs.

I know better than to keep bees in neatly ordered rows. In fact, one time I had a stand of bees on a rich piece of property, and one day the property manager descended upon me to tell me that the hives had to

be lined up evenly. I looked him right in the eye and told him no. He couldn't believe it. He said the padrone wanted everything neat and even. I said I don't work for the padrone, or you. The hives stay crooked. He left in a snit. Later, after he had complained to the padrone, the padrone told me not to listen to him, and I never saw the man again even though I kept bees on that property for several more years. It's curious what some perceptions rate as important.

Did you know some beekeepers get bent out of shape by the presence of propolis in their hives? Now don't that beat all get out?

Anyway, my mind kept trying to see the rotten equipment as unsightly, something to be ashamed of, as though using it was putting me beneath the beekeepers with the good stuff, even though those with the good stuff were, for the most part, out of business, and my business was growing by leaps and bounds, between bouts of depression.

Beauty is a dangerous thing, because it's entirely subjective and the world acts as though it were entirely objective. This big mistake is costly to beekeeping as well as pretty much everything else.

If you are familiar with Friedrich Huntervasser's "Against Rationalism in Architecture," then you know where this goes. But on the slim chance you aren't, I'll elaborate. When a man-made piece of architecture (in historical context always striving for increased levels of excellence) is new, whether it is a home for human habitation or a beehive, it is sterile. Huntervasser asserts that until a home has sagged and there are cobwebs in the corners and a patina of grime over the walls, it is unhealthy. He points to designs which round the corners of doorways as superior. Had he been a bee man, he would have preferred skeps to Langstroth hives.

God does not create sterility. There are no straight lines in Nature. Mankind deludes itself with the concept of straight lines and man creates sterility. It is the end

result of the human mind's purification process, the unconscious compulsion to be ever striving for ever increased excellence. Man must always outdo him- or herself. He or she must always keep raising the bar. He or she sees Nature as a replication of the same process, as in the Theory of Evolution.

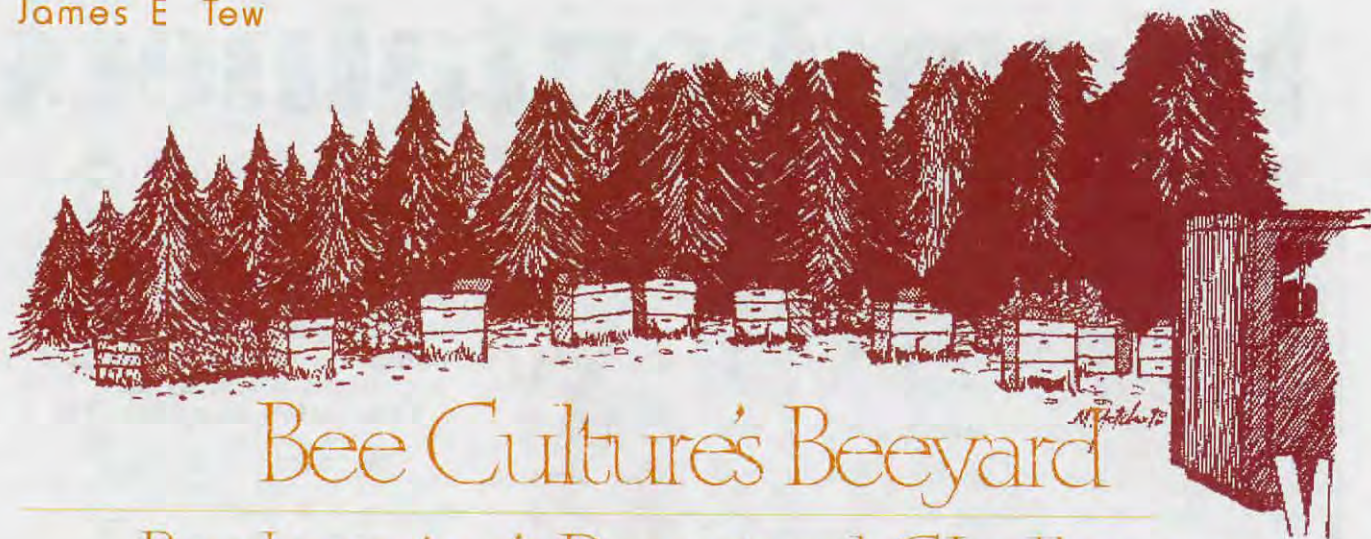
It has been said that God created Man in His or Her own image. It has also been said that Man created God in His or Her own image. So I guess it all boils down to personal opinion, who you are and where you're coming from. In my opinion, Man is the culprit. In our efforts to make it better, we invariably make it worse. And nothing is a better example of that than beekeeping.

I am not trying to make a case for laziness and neglect; I am trying to make a case for inevitability. Except for those among us who happen to be virgins, we all know what it means to "break-in a virgin." The virgin is emblematic of the highest level of purity, but yet we all pretty much understand the virgin to be improved by the very process of being sullied. Such paradoxes are a way of life with us. But at what point does the break-in turn into the break-down? Maybe when the object has no further possible use except for composting.

No longer threatened by *Varroa* or any other parasite, no longer threatened by disease, death or humiliation, instead enhanced by these factors, my beekeeping has arrived philosophically and practically. I'm comfortable with the bad equipment, finally. I see it is beautiful.

But I don't mean to imply that my perfect beekeeping is perfect. My perfection is imperfect. My beekeeping is not without its problems. Why, just the other day, as I was prying the top off a beehive, it just disintegrated in my hands. See? I suffer too. **BC**

Charles Simon is a freelance writer, author, and bee removal expert living in Soquel, CA.



Bee Culture's Beeyard

Beekeeping's Perpetual Challenge

It happens every year

Every season, beekeepers face essentially the same questions. Where to get the best queens, how to make a large honey crop, how to best control mites and pests, and how to survive the Winter, are certainly some of the more common challenges. But for the past 15 years, we have fixated on mite control. Nearly everything we do relates to controlling mites.

Mites, Mites, Mites

Sooner or later I'll get in trouble with some of my comments like those that follow, but I need to say it – I am absolutely sick of mites and talking and writing about mites. If I knew nothing about bees and was abruptly dropped into the average bee meeting, I would have a great deal of trouble determining if the meeting was about bees or mites. All major meetings allocate significant time to the very latest in mite control. You demand it. We test equipment. We select special queens. We look at every chemical concoction under the bee sun. We do all these things and yet mites survive – even thrive. I'm not going too deeply into this subject of mite control for fear that I will write just another mite article; yet another article that still won't have the final recommendation.

I pine for the old style of bee meetings that included presentations on subjects like proper equipment usage, honey processing equipment, hiving swarms, and getting ready for Winter. All of those topics are now flavored with mite control recommendations within each of the subjects. Mite discussions are like a computer virus – there is hardly a single topic that can be discussed without including the requisite mite comments¹. Though I am cloyed of mite discussions, (with a heavy sigh) such discussions cannot be eliminated. Mites are here to stay and we must deal with them.

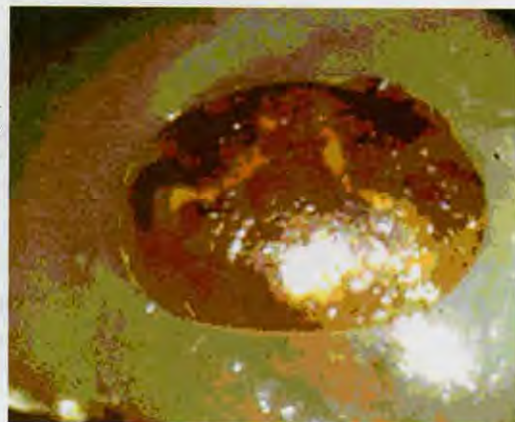
How are you controlling your mites?

I have no science; no statistical evaluations; no surveys to support my observations. I only listen to what you tell me at meetings and in our correspondence. I read a lot. In my opinion, no clear best method comes to the surface for all beekeepers in all hives all the time. That's troubling for a clear recommendation cannot be made.

Many of you are still using fluvalinate strips (Apistan™). They still work very well for mite control in the colonies at my lab. We alternate with coumaphos (CheckMite™) every few years. Others of you are opposed to "chemical" use, but want to control mites with something, but something safe (not meaning to intimate that the hard chemicals are not safe). I can't really disagree with you on this point. I cringe at the thought of someone misusing registered chemicals and subsequent residues coming to the public's attention. There must be something better.

Others of you use "soft" chemicals such as aromatic oils, vinegar, or mineral oil. Testimonials of successes abound. Those of you who are not successful are normally quiet about your failure feeling that it must have been something you did wrong. I don't doubt that such lesser chemicals provide adequate controls sometimes, but I cannot say that they would categorically provide long-term control.

Varroa –
beehive
enemy #1.



¹ The Alabama State Beekeepers' Association 2003 fall meeting had the intent of *not* presenting any talks on mites and pests. They were not completely successful, but they came close. I thought it was a gutsy thing to do. I enjoyed the mite/beetle/foulbrood reprieve.

I, and ever so many other speakers, have described Integrated Pest Management (IPM) schemes. Many of you use this program and it is a good program, but as I said above, nothing provides for perfect control all the time. Essentially, if you use a soft chemical, have a mite resistant queen stock in your colony, and use a screen bottom board, you are using IPM principles. Yes, IPM is a good thing, but no, IPM is not – by a long shot – foolproof. As a beekeeper who is trying to manage mite populations, you will miss the call occasionally. A colony will die, but some will live. You must keep trying and in doing so, will use hard chemicals less and less.

A precious few of you are doing nothing at all to control mites. Your colonies will erratically decline and die over time and you simply replace them with package bees. Your chemical costs are reduced to nothing and you cut your labor efforts dramatically. Importantly, your bees (and honey) are not exposed to chemical insecticides. (Having boldly written this, I immediately admit that a dead colony always causes me a flash of remorse.)

My advice for mite control?

I can't tell you what to do all the time. All of you are very different. Some of you will spare no expense and will use traditional chemical control procedures while others of you explore soft chemical use and other IPM procedures. A few of you have good intentions at using some kind of control, but due to time restraints, will employ haphazard procedures. Obviously, your results will be mixed. A few of you – for your own reasons – will do nothing at all. If I had to put something in writing, I would suggest that you use IPM techniques and keep the hard chemicals for the occasional, but necessary use. Always, always follow label instructions. But using IPM methods will require to you use queen stock resistant to mites. That's a different can of worms.

Hygienic Queen Stock

A close second to mite control articles and talks are the frequent articles and talks on the perfect queen to head the colony. Good luck. You'll certainly need it. I honestly have nothing but the best opinion of our industry's queen producers. They work hard and produce a good product. Many of them are scrambling to produce mite-resistant stock because people like me are telling people like you to buy it. But you can't just buy a super queen, install her and forget her. Were only it that simple.

There is no standard for mite resistant stock other than what the producer says in advertisements. When line queens are open-mated, no producer can guarantee the parentage of the drones with which the queen mates. Normally, queen producers provide drone colonies to produce selected drone populations but there are still wild drones about. So, if you got a great queen from a particular producer, you may or may not get a great queen the next time. Most producers can routinely produce good queens, but I don't know of any who can routinely produce great queens. Interestingly, we have been looking for the perfect queen since the earliest days of our beekeeping. While we have definitely selected for good bee stock, we still have not



The perfect queen? Our search goes on.

found the best stock – even after looking for more than 100 years.

First, requeening, for swarm control, for gentleness, for honey productivity, and for mite resistance, is a good recommendation, but there are no guarantees how well the queen will work out. In fact, many of you have complained to the high heavens about erratic queen performance.

Secondly, requeening – for any reason – occasionally will not fill the need. I have heard from numerous beekeepers who put in a select queen only to let other beehive needs go unmet resulting in a swarm or a supersedure of your queen. Well, kiss that special queen goodbye along with the attributes for which you were hoping. Too frequently, beekeepers feel that they have done enough by installing a queen and then thinking that their mite control needs are met. It is a very rare queen that has characteristics strong enough to totally resist mite infestations. But mites are strange on this point, too. Weather and other conditions can affect mite development. Many times, a very plain queen can produce offspring that survive with minimal mite control procedures. It's just luck and it is a lucky time that will run out. Enjoy it while it lasts.

Thirdly, can you effectively requeen a colony? In previous articles, I have said that requeening is hive surgery and you're the surgeon. I sense that many beekeepers new to the craft would be better off learning beekeeping procedures first before trying to requeen the colony just because someone like me told you to do it. *Beekeeper, do no harm.* A colony would be better off headed by a queen susceptible to mites rather than to be held back by a clumsy requeening procedure that sends the colony into Winter in a weakened condition.

This all sounds depressing

Well, I suppose my comments may seem depressing, but I don't mean for them to sound that way. Have a look at the old bee literature. Before we understood American Foulbrood (AFB, ironically, a disease for which we still don't have a complete cure), articles abounded on novel ways to control this bacterial disease. Old bee magazines are replete with articles on controlling problems like AFB and wax moths. They were the problem of the day.

We have always looked for the perfect queen to

Continued on Next Page

head the perfect colony, a colony that would always produce the maximum honey crop and produce healthy worker bees. We haven't found her, but, through all these many years, we have made significant progress. Our bees are gentle, but our bees are protected by antibiotics. We are living productively with mites, but mites have not gone away. Initially we were using nothing but chemical control, but now adequate - but not perfect - mite control procedures are available to us. We are making progress.

Be realistic

Using IPM procedures is the right thing to do, but not the perfect thing. The occasional colony will still wane, but other colonies will flourish. Keep good

queens in your colony, but make a commitment to regular requeening. You must do this on a timely basis or don't even bother. Accept mites as a way of bee life, but continue to enjoy and explore all the other traditional attributes of beekeeping. Make candles. Make creamed honey. Pick up a swarm. Use different types of frames and foundation. Do these traditional bee things - not to control mites - but to simply enjoy beekeeping. No doubt, new problems are on the way - problems that will make mite control concerns seem old fashioned. Then, at least, we will have something new for us to complain about. **BC**

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Our readership fairly reflects the general U.S. beekeeping population, so we want to cover what you want to see covered. Let us know.

I've talked about the tourist trade before. This month we have a good article on opening some part of your business to the public - school tours, farm market co-op situations and the like. In the right place (location, location, location) supplementing your income this way is a no-brainer. Read the article and see if there isn't a spot for you there. It's money in the bank.

But that's not the whole story. Beekeepers are tourists, too. They (we) travel to meetings, stay in hotels, and pay others to organize an educational and entertaining experience all the time. Where? Local, state, regional, national and international beekeeping meetings, that's where.

We pay to listen to people tell us what they know and we don't. We pay people to show us how to do things we don't know how to do. And we pay to see things we don't get to see anywhere else.

But meetings are artificial. Contrived. Timed. Structured. Disciplined (mostly), and almost never hands-on-enough. We get to see, but not touch, hear, but not do, and just mostly listen, and not question. We're spectators. Meetings are a spectator sport.

Don't get me wrong. There is tremendous value in this, as far as it goes.

But imagine this for a moment. Imagine, instead of watching a power point demo of making a divide, complete with animation and clever backgrounds, driving to a holding yard at 6:30 in the morning that has 250 pallets full of hives, with orders to split them all two, three, maybe four ways. Today.

And then, first watching and listening, then helping, then doing those splits all morning. Break for a lunch of sandwiches, coffee and a Twinkie, and doing it all afternoon. Except when you had to make the warehouse run and stack the truck full of boxes to use the rest of the day.

Imagine what you'd learn after eight, nine, maybe 10 hours of this. Imagine how much better you'd be at estimating brood and the number of bees in a box, finding queens, and culling bad comb.

The second day, instead of heading to yet another class room and more power point, at 6:30 you load up all those splits and move them to a couple dozen mating yards, and then stick 1,000 just-harvested queen cells. Flip the top, stick the cell, look quick at the population, replace the top and move on.

Lunch in the woods. Cool. Maybe rainy. Doesn't matter 'cause you gotta finish. There's another 1,000 ready tomorrow.

One excellent learning tool is the simple repetition of a task. Another is looking at many that are the same, and recognizing the few that aren't. Yet another is working with someone who knows the ropes, the tricks, and the secrets because they have to, to survive. That day, you had it all.

Now that's a classroom.

The same goes for shaking packages, producing queens, adding supers and checking queens, pulling supers and blowing bees, extracting, pollinating, migrating, making barrel deliveries, building equipment (well, maybe not building equipment), assembling nucs for sale, feeding . . . the list goes on and on and on.

Imagine what you'd learn.

People who run meetings charge \$50, \$100 even more so you can sit in a comfortable chair, have nice long breaks, and be done early, and on time.

What would you pay for a day of making splits with a 10-year veteran? Learning to graft from someone a third your age and five times as fast?

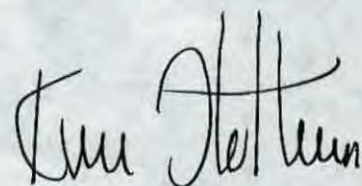
What would you pay? Is anybody listening?

I have the great good fortune of attending The National Honey Show in London later this month. I was invited to entertain and educate (sorry, no power point for these presentations) a large group of beekeepers from all over the world, to assist and learn how honey bee products are judged there (all day, sandwiches, coffee and maybe a Twinkie for lunch), and absorb first hand another culture. I'm torqued. This is special.

A bit of the tourist, a trip to Stonehenge is planned (there is a drop or two of the Druid within these veins), on the way over to visit IBRA, and we hope to see some of the sights in London.

I hope to share what I learn about honey judging and IBRA, and the beekeepers I meet, but little of the climate, the scenery, or the food. Well, maybe the food. I've tried Mark Winston's suggestion about scones and clotted cream. He was right.

And finally, from all of us here at *Bee Culture*, please have a safe and peaceful Thanksgiving Holiday.



Confessions Of A Beginning Beekeeper

18 Rules To Contemplate And Consider

Spiros Psarris

Having finished my first three years of beekeeping, I've learned to ignore everything but experience. I've learned to ignore the beekeeping catalogs – for example, although they advertise certain gloves as “virtually stingproof,” the bees immediately taught me that the word “virtually” completely falsifies the rest of the description. I've learned to ignore the helpful tips on the Internet: “You need to use lots and lots of Bee-Go on your stinkboard. Pour it on,” they said. (Thanks, guys. two years later, my wife still gags each time she walks into the

Here's how to avoid all the Dumb Stunts that I've pulled (and as you'll see, some of them were spectacular...)

Your first season of beekeeping

Rule #1. After your first season, if all goes well, you might actually have a small harvest. DO expect to be overwhelmed with wonder at your very first frames of honey. Also, DO expect your arm to feel like it will fall off, since the only extractor you could afford was the manual one.

2. DO expect to feel very possessive over the small amount of cappings wax left over. Even though it's an insignificant amount of wax, you'll still have fantasies about making your very first beeswax candle. But how to go about doing this?

3. First, you must separate

the wax from the honey. DON'T believe the beekeeping books which say that merely placing the wax in a pot of hot water will magically separate the wax into a nice mass floating on top of the water. The wax will melt, and it will float on top, but not as a nice neat mass rather, as a bubbly scum.

4. DON'T confidently assume

that merely stirring the bubbly scum with a wooden spoon will help the wax to separate from the honey. All this will accomplish is coating the spoon with the scum, too. Also, DO notice that by the time you've figured all of this out, the amount of boiling water in the pot has decreased, therefore there is now a ring of wax starting to form inside the pot as well.

5. After a surreptitious glance at your wife – who, being nine months pregnant, is sleeping on the couch – DON'T confidently assume that you can clear all this up in a jiffy, and none will be the wiser. First of all, DON'T think that you can still save the wax when you dump out the water. In a moment of fuzzy thinking, you might be tempted to pour the water/wax mixture through a strainer, but DON'T do this – you will hopelessly clog the strainer with wax. Also, DON'T have the strainer in the kitchen sink, under the assumption that the strainer will catch all of the wax – it will not, by far.

6. After breaking rule #5, DON'T bother trying to clean out the strainer, since even repeated pourings of boiling water through it will not make it clean again (Ever). Also, DON'T bother trying to explain to your wife (who is now awake) exactly why her wooden spoon, her strainer, and her kitchen sink, are now coated with beeswax (a substance that is notoriously hard to remove). There's really no good answer to any question that begins

garage, where my equipment is stored.) I've even learned to ignore advice from the older beekeepers: “No, you don't need gloves or even a suit with MY bees. They're very gentle.” Well, he was sorta right – they didn't chase *him* for a quarter-mile, only me.

So, I finally came up with a set of Do's and Don'ts for beginners.



with the words, "How could you be so stupid?"

7 Also, DON'T be surprised to find out that the big cooking pot (which is also now coated inside with wax) was your wife's "best pot." And, DON'T be surprised to hear that it was also her "best wooden spoon." Even though these things cost all of 99¢ almost anywhere. How can you have a "best" wooden spoon?

8. Incidentally, DON'T discuss the price of wooden cutlery with your wife at this time. She will be strangely unreceptive. Also, DON'T bother trying to hide the strainer, either. She'll find it eventually anyway.

9. After breaking rules 3, 4, 5, 6, 7, and 8, DON'T be surprised when your beekeeping equipment is permanently banished from the kitchen, after only one year of beekeeping.

Your second year of beekeeping

10. In your second year, you'll be more confident around the bees, and working them should go more smoothly. However, DO expect that the overall level of klutziness won't necessarily improve. For example, DON'T set an armful of used supers down anywhere in the house. You will be unpleasantly surprised by the propolis that gets left behind in a very unwelcome place. For example, on the couch.

11. After breaking rule #10, DO be aware that rubbing alcohol and turpentine are good at removing beeswax and propolis, respectively. Which may or may not be something you'd want to apply to your couch.

12. DO expect that (if all goes well) you should have a substantially bigger harvest in your second year than in your first. You also might have better equipment, perhaps having invested in a spanking new electric motor for your extractor. No more aching shoulders and elbows!

13. However, DON'T be so en-

amored with your spanking new electric motor that you do foolish things. For example, if you're extracting in the mudroom of your house (this being the only location where your equipment is allowed now), DON'T always be lifting up the lid to watch the honey as it gets flung out of the comb. It is indeed beautiful to watch, but afterwards you'll find yourself asking your wife brilliant questions, like "How come the glass door to the mudroom is opaque now? Wasn't it transparent when we bought this house?"

14. As your wife is grumbling and muttering as she scrubs the film of honey and wax off the glass, DON'T bother offering any helpful advice, such as that found in rule #11. Strangely enough, she won't want any help from you.

15. Also, DON'T rely on your spanking new electric motor to do all of your work for you, unsupervised. For example, DON'T leave your extractor running when there is already a couple of comb's worth of honey in the tank. Otherwise, you will come back to a mudroom filled with acrid smoke, as your very expensive (but now useless) spanking new electric motor has fried itself in an effort to spin the frames around in the growing pool in honey in the tank.



16. Finally, DON'T come up with brilliant time-saving schemes at the end of extraction, like propping up the full extractor on a stack of boxes against the wall, leaving it to drain into the bucket by itself. True, you will save time because you don't have to stand there holding the extractor up. But, this will be more than cancelled out by the time you lose during cleanup...after the unsupervised extractor falls down, knocking over the open bucket of honey in the process. (Incidentally, DON'T expect that the floor can be cleaned with only one or two washings. Your wife will have to wash it many times, with hot water, before it's not sticky anymore.)

17 After breaking rules 10 through 16, DON'T be surprised when you find yourself, with all of your beekeeping equipment, banished from the ENTIRE house, after only two years of beekeeping.

Your third year of beekeeping

18. By your third year, DO expect that you'll finally get the hang of this thing, and won't be doing anything spectacularly stupid anymore. You'll be tempted to experiment with different races and kinds of bees. You'll be bold enough to try different types of honey (like rabbitbrush, which is almost black in the jar, and smells like old stinky feet while in the hive, but still works well as a sweetener). And you'll have made most of the mistakes already, so you should no longer have propolis on the couch, honey on the floor and walls, beeswax in the cookware and sink, or even smoke in the mudroom.

Your wife might even allow you back in the house!...(but DON'T hold your breath!) **EC**

Spiros Psarris is a hobby beekeeper living in Tacoma, WA. He is actually quite competent at his day job, but somehow beekeeping brings out the klutz in him. He has a wife and two sons.

HOW MANY DRONE COLONIES DO YOU NEED?

Larry Connor

A big question for queen producers to answer is how many drone mother colonies (colonies headed by a queen of a particular genetic type) are needed to insure adequate queen mating. Let's address this issue head on, with particular emphasis on the fact that the overall dynamics of queen mating has changed considerably during the past 20 years.

In David Ives six-pack of one-act comedies titled *All In The Timing*, one of the six is called *Words, Words, Words*. It shows three monkeys (played by grown men and women) in a room filled with typewriters, acting out the adage that a room full of monkeys will eventually produce *Hamlet* given adequate time. It is funny, reminding me of a room filled with beekeepers trying to figure out how to raise perfectly mated queen bees. (There is grunting, yelling and screaming in both scenes).

When Can I Graft My Queens?

Timing is everything in raising queens and getting them mated. The queen metamorphoses from egg to emergence in 16 (or fewer) days, and then matures and mates in about a week. Drones metamorphose from egg to emergence in 24 days and are sexually mature in 10 to 12 days. In earlier articles I discussed the difficulty of guaranteeing drone production in a colony, especially early in the season when the colony's nutritional environment is poor.

In an effort to show many ideas on one sheet of paper, I produced Table 1, Developmental periods for drones and virgin queens adjusted for reproductive timing. (Did someone mention monkeys typing?)

The first column represents a daily countdown from the time a beekeeper installs drone comb (combs of drawn, empty drone cells) into a drone mother colony to the time mated queens can be harvested from mating nuclei colonies or are actively laying in increase colonies (splits, divides, etc.). From start to finish, this process takes almost seven weeks!

The second and third columns show the drone developmental stages (total of 24 days) plus time for sexual development (10-12 days), for a total of 34-36 days.

The fourth column shows the countdown to **mating**, the key to this entire table. It shows the point where the relative drone production and virgin production must align in order to have young, sexually ready drones flying at the same time the virgin queens are also ready to fly.

The fifth and sixth columns show the virgin queen

developmental stages (total of 16 or fewer days) plus time for sexual development (7 to 8 days).

These are biological events, subject to human errors. For example, we normally figure that queen eggs take 16 days to virgin emergence. However, we know that there are some strains that develop in shorter time intervals. Also, if a beekeeper grafts from larvae older than 24 hours old, the resulting queen will emerge earlier because she is already older!

Think monkeys at typewriters. A large number of wrong keys may be hit before the right combinations are found.

Look at the fourth column, and day "-20." At this point the beekeeper has drones in development that will be ready for the queens grafted that day. Since the queen larvae are already 3 days old (as eggs) and 12 to 36 hours old (as larvae) (anything older will not be a usable queen; most breeders want to graft 12 to 24 hr old larvae), the corresponding drones must be in drone brood cells that have been sealed for at least five days. Otherwise the drones may not be sexually mature.

Exceptions abound. Some beekeepers and breeders maintain that drones are sexually ready to mate 8 days after emergence. I raise considerable caution here: drones make orientation flights at roughly 8 days post emergence but that does not mean that they are sexually ready to mate at that point! Sexually mature drones will be on the side combs of the hive, where the pollen and honey are located. Their bodies will be hard and when hand ejaculated they will have copious semen on the penis. If the drone is hard but there is no semen on the penis, the semen may not have migrated from the testes and may not be available to the virgin. Or something else may have occurred: poor production conditions, pesticide injury from mite treatments, mite feeding damage, or something yet unknown.

Bottom line: Graft queens when you have adequate amounts of drone brood that has been sealed for five days.

How Many Sealed Drone Brood Cells Do I Need?

In Table 1, we see how developmental biology – the bees' calendar – determines the rate at which drones and virgin queens develop. Because drones require longer developmental time than queens, we see we need sealed (capped) drone brood for **at least five days prior to grafting**. Otherwise, the drones will not be sexually mature to mate with the virgin queens.

Days To Laying	Drone Time	Drone Life Cycle	Days To Mating	Queen Life Cycle	Queen Time Line
-46		First Drone Comb	-40		
-45			-39		
-44			-38		
-43			-37		
-Week 6			-36		
-41	-24	Drone Egg	-35		
-40	-23	Egg	-34		
-39	-22	Egg	-33		
-38	-21	Larva hatches	-32		
-37	-20	Larva	-31		
-36	-19	Larva	-30		
-Week 5	-18	Larva	-29		
-34	-17	Larva	-28		
-33	-16	Larva	-27		
-32	-15	Larva	-26		
-31	-14	Sealed Drone Cell	-25		
-30	-13	Pupa	-24		
-29	-12	Pupa	-23	Egg	-16
- Week 4	-11	Pupa	-22	Egg	-15
-27	-10	Pupa	-21	Egg	-14
-26	-9	Pupa	-20	Larva-Grafting	-13
-25	-8	Pupa	-19	Larva	-12
-24	-7	Pupa	-18	Larva	-11
-23	-6	Pupa	-17	Larva	-10
-22	-5	Pupa	-16	Larva	-9
- Week 3	-4	Pupa	-15	Larva	-8
-20	-3	Pupa	-14	Sealed Cell	-7
-19	-2	Imago	-13	Pupa	-6
-18	-1	Drone Emerges	-12	Pupa	-5
-17	1	Immature	-11	Pupa	-4
-16	2	Immature	-10	Pupa	-3
-15	3	Immature	-9	Cell to Nucleus	-2
-Week 2	4	Immature	-8	Virgin Emerges	-1
-13	5	Immature	-7	Immature	7
-12	6	Immature	-6	Immature	6
-11	7	Immature	-5	Immature	5
-10	8	Immature	-4	Immature	4
-9	9	Orientation Flights	-3	Immature	3
-8	10	Orientation Flights	-2	Orientation	2
- Week 1	11	MATURE	-1	MATING	1
-6	12	MATURE		MATING	2
-5				Maturation	3
-4				Maturation	4
-3				Maturation	5
-2				Maturation	6
-1				Maturation	7
Laying Queen				Laying Queen	8

Table 1. Developmental Periods for Drones and Virgin Queens Adjusted for Reproductive Timing. Note: See article to use this table.

The best way I know to estimate drone production is to measure their **square inches of sealed drone brood**. A drone comb (drawn from drone comb foundation) with an area of sealed drone brood 10 inches wide by five inches tall, represents 50 square inches of sealed drone brood. Since the comb is double sided, if there are drones on both sides we may double that for 100 square inches of sealed drone brood. There are four drone cells per inch, so one square inch of sealed

drone brood represents 16 drones. In the above comb, there are about 1600 drones in development (16 x 100). While you can think in terms of exact numbers of developing drones, it may be easier to grasp the number of square inches of drone brood in production.

It is relatively easy to train yourself to estimate square inches of drone brood. Start out with an inexpensive ruler and measure a few frames. You will soon train your eye to *estimate* how many sealed drone cells

Continued on Next Page

are present. *Do not measure open drone brood – it may not be there tomorrow!*

Once drone production is underway during the season, the amount of **sealed drone brood represents the drone egg laying of the queen for 14 days.** (Why? The drone takes 24 days to develop to adult stage. The egg stage lasts three days and the larval form nearly seven days, leaving 14 days for the pupa stage.) Thus, if you take the number of sealed drone brood cells a colony holds and divide by 14, this estimates the daily average production of drones by *this* colony.

In our comb of 1600 sealed drone cells, if we divide by 14, this means that there will be about 114 new drones available from that colony *each day* for mating. While this may seem like a large number of drones, it is not. First, we are looking at the number of sealed drone cells, not the number of sexually mature and flying drones. There is considerable **drone attrition** due to disease (especially chalk brood), parasitic mites, neglect by worker bees, bird and insect predation, and accidents. Weather plays a heavy hand and interferes with food supplies, stimulating worker cannibalism, and worker bees will tear down the sealed cells and eat the developing drone pupae. Cold temperatures may interfere with sperm migration, so that not all adult drones are able to provide sperm to the virgin during mating.

In more natural situations – those not managed by beekeepers raising queen bees – estimates of the percentage of drones that actually mate are quite low, five percent or less. This is good news for the random supersedure that occurs in most colonies. But in an aggressive queen mating environment – a commercial beekeeping operation or a queen propagation firm – the percentage of drones that are used during mating is certainly higher.

Ideally, at the end of the daily mating period, there will always some drones that expire of natural causes. Otherwise there is no **competition** in the mating area for the strongest, healthiest drones.

I find it useful to use a recommended number of square inches per queen as a means to know that I

have enough drones of the desirable type in development. Look at Table 2. The three right-hand columns show three different mating conditions. “Historic” refers to pre-1980 conditions, where there were many beekeepers, many bee trees, and abundant drones during much of the season in most years. “Current” reflects the lower drone populations we today experience in many areas. There are fewer hobby and sideline colonies and relatively few bee trees. Migratory and commercial beekeepers are often in islands relatively free of ‘other’ drones, and may experience a shortage of drones and not be aware of these conditions. Finally, in a “Competitive” environment, you may have many more undesirable drones in the area than desirable target drones. We can see this in areas where African type bees are found around European mating areas. **Drone Saturation** is the key. Many non-target drones will compete with target drones – your drones – and you must supply plenty of your ‘good guys’ to numerically compete with the ‘bad guys’ (And I will not get into competitive differences or advantages between different races of bees, but they certainly do exist). Certainly, the non-target drone, the ‘bad guy’ may be from a neighbor commercial beekeeper who is producing stock you do not want or is too closely related to your own.

Under “Historic” conditions – before mites, hive beetles and African bees – I suggest that **two square inches** may have been a safe measure for *each* queen. That means there were 32 sealed drone cells for each queen cell we put into a mating nucleus or planned to instrumentally inseminate. In “Current” conditions I have doubled that number, suggesting you will need to produce *four square inches* of sealed drone brood for each virgin you wish to mate. Finally, in the “Competitive” environment, I have doubled it again, suggesting you need *eight square inches* of drone brood *for each virgin* you attempt to mate when surrounded by ‘bad guys’

This method intentionally sidesteps the question: How many drones does a queen mate with? Some believe virgin queens mate with eight drones, others 12, some 15. One study suggested that 28 drones are

Ripe Queen Cells Per Day	“Historic” Abundant Drones	“Current” Few Drones	“Competitive” Many Unwanted Drones
Square inches drone brood/queen cell >	2	4	8
100 cells	50 in ² /day	100 in ² /day	200 in ² /day
Drone Colonies*	14 colonies	28 colonies	56 colonies
200 cells	100 in ² /day	200 in ² /day	400 in ² /day
Drone Colonies*	28 colonies	56 colonies	112 colonies
300 cells	150 in ² /day	300 in ² /day	600 in ² /day
Drone Colonies*	42 colonies	84 colonies	168 colonies
400 cells	200 in ² /day	400 in ² /day	800 in ² /day
Drone Colonies*	56 colonies	112 colonies	224 colonies
500 cells	250 in ² /day	500 in ² /day	1000 in ² /day
Drone Colonies*	70 colonies	140 colonies	280 colonies

Table 2. Square Inches of Sealed Drone Brood Needed for Adequate Virgin Mating.

*Each producing a minimum of two drone combs of 100 in² sealed brood each: Drone Mother Colonies support between 1 to 3 drone combs each, depending on strength and conditions.

needed for each virgin. I have been using 20 drones in my previous articles, but if we produce lots of surplus drones, our needs should be fully met. As beekeepers our job is to make sure that there are plenty of mature drones in the mating area.

How Many Drone Combs? How Many Colonies Do I Need?

We may now ask the big question: How many drone mother colonies do I need to surround my mating area. Let's use an example:

Consider "Current" conditions: We want to produce an average of 64 sealed drone cells - four square inches for each queen cell, and we put out **100 queen cells per day** into nuclei colonies or divides. This means we need $4 \times 100 = 400$ square inches of drone brood *every day*. If we average 100 square inches per drone comb (1600 drones), we will need 4 such drone combs each day for 14 days, or $4 \times 14 = 56$ drone combs. ($56 \times 1600 = 89,600$ drones).

Depending on colony strength, we can estimate that *on average* each colony will support two drone combs. So if we need 56 combs per day, we will need drone production in **28 healthy colonies** headed by drone mothers of a desirable stock. One empty drawn drone comb should be placed into drone mother colonies about 40 days prior to grafting, and an additional empty comb added five to seven days later. When colonies are strong, a third comb may be added on the tenth to fifteenth day. By then, the cycle should start to repeat, and adequate numbers of desirable drones will be present in the mating area.

Table 2 shows how many square inches of drone brood you need in a colony and estimates the number of colonies at *two combs* per colony. We are *not* measuring open drone brood (eggs and larvae), since this is a very dynamic number in a hive.

Once drone brood is sealed it may be moved above an excluder in the same colony (and moved later) or immediately moved to a drone feeding and holding colony. These are cell-builder-like colonies which house sealed drone brood and may be fed heavily to insure the maintenance of newly emerged drones.

What Might Go Wrong?

Queens produced early in the season have a great risk of being produced under 'low drone' populations.

In the southeast, Texas and California, where most of our queens are raised, there is always the risk of poor early conditions. Using Table 1, you can see that the nearly seven week time period from the installation of drone comb to the point of harvesting laying queens, puts the production of drones into very early conditions.

For example, a queen 'harvested' from a mating nucleus on April 1 was probably grafted about March 12. The drones she mated with were from eggs laid by the queen about February 27 into combs placed in the colony about February 20.

Earlier queens push against the calendar even harder. A queen harvested March 1 reflects February 9 grafting and mating to January 27 drone eggs!

Conditions in south Florida in January can be highly variable. Some years there are eggs in drone cells by the first week of January. Other years, when winter cold fronts plow into the state, drone production may be cut or completely stopped.

California has problems with winter rains in many of the mating areas. In Texas, most anything can happen. In Georgia it always does.

In fact, no area has a perfect setup for queen

rearing; there are limitations everywhere. I have always felt that the main reason a beekeeper relies on the same queen suppliers every year is the close relationship that develops between the two. If a queen producer strongly recommends taking later queens, seriously consider the delay. It may pay in the long run.

If you are a commercial migratory beekeeper, watch your drone development and graft accordingly. Use the data in the two tables in this article to help you predict when you should graft, and in what numbers. Yes, virgin queens will wait in mating nuclei colonies for suitable mates, but if inadequately mated, or mated to inadequate drones, the result may cause you long-term headaches.

It's not a time to monkey around. **BC**

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Without them, nobody knows you're there

Signs are an important part of our lives. Some tell us what to do: STOP, ONE WAY, THIS END UP (always delivered the other end up). Some tell us what not to do: DO NOT ENTER. SMOKING PROHIBITED. Others announce something of interest: FREE, FOR SALE, SPECIAL OFFER. Now perhaps you can see that your honey sales will benefit from good signs. Signs inform the prospective customer.

Signs and other attention-getting items, whether large or small, add to your presentation of honey and hive products. I am not talking about crude, hand-lettered signs on a piece of white paper, tacked up on a post or taped to a table top. You may think those give a "down home" look. Those do not give the impression of your having a quality product. Honey must be presented as a quality product and priced to reflect its good quality.

Many of the bee equipment suppliers offer signs that can be hung on a fence post or tree on your property, providing local ordinances permit. Actually by the time someone sees your attractive sign, it is too late to stop, unless a quiet country road offers a chance to go slow and back up if necessary. If possible, announce "local honey 1/4 mile on left" by posting such a sign on a cooperative neighbor's tree, followed by the one on your own property. Now you are giving instructions and giving customers a chance to slow down, stop and buy.

Bee equipment dealers are not the only places to obtain signs. Banners, pennants, flags, and all types of signs can be purchased, both locally and by mail order. These, of course, are long-lasting so that your initial expense is really spread out over a number of years. You may only use a big banner a few times a year, but during those few times it can increase your visibility.

For example, a local beekeeper, who sells at a weekly farmers' market, had a large, strong plastic banner made – bright yellow background with large red letters. All the sign says is "local honey." However, since the farmers' market is on the side of a 4-lane highway, the sign is hung to be visible from the highway. Successful at bringing in customers? Yes, indeed. The beekeeper reports that people enter the market and, without looking around, ask where the honey booth is. An informal survey, to be sure, but one that indicates effectiveness.

While you are looking through the beekeeping equipment catalogs, see if there is a windsock of a funny honey bee. Windsocks can be easily mounted by your stand at a craft fair or farmers' market or even at your driveway to attract attention. Fortunately the windsocks are funny, happy bees, not at all frightening with stingers.

Signs and banners that withstand weather and are easy to display really do not cost an exorbitant amount. Even the money spent on a big, custom-made sign

or banner will be spread out over many years. You can buy 100 feet of brightly-colored pennants for about \$10.00. Although these say nothing about honey, they do attract attention.

Perhaps you need a few small signs for a display table. Please do not attempt hand-lettering. In these days of computers let the computer do the work. If you feel you are not computer-literate, just find an eager teenager and compensate with a jar of honey. The office supply megastores have colored paper in just about any color you want, from brilliant Day-Glo to more quiet colors.

Now, instead of using tape to stick your poster on something, how about a protective holder, one that allows you to easily change your poster yet allows it to stand up and be visible. You can obtain inexpensive plastic-covered easels in various sizes from Hutchison Company Advertising Displays, 508-234-4681, www.hutchco.com. The easels, called Universal Counter Cards, fold flat and are unbreakable. You could use small ones to advertise different varietal honeys on your display. You will see the available sizes and prices when you open their website. And you will find other items to help advertise your hive products.

Since farmers' markets have grown in popularity, signage for them has also grown. So beekeepers can benefit from the various shapes, sizes and designs of banners, flags, and signs that are available.

Unfortunately honey is not as popular as sweet corn or tomatoes but custom signs and banners can be ordered.

To give you some ideas – to think about during the Winter – send for a small catalog from Produce Promotions, 888-575-4090, www.inberry.com. Their graphics are excellent. The colors are bold, the designs extremely simple but extremely effective.

One of the beautiful flags, standard design, is a honey bear. You can have a 3X8 foot heavy-duty plastic banner, with ties, that proclaims “fresh honey” with a skep and honey bee for a little less than \$30.

Yes, you can design your own signs, banners and flags. But study that little catalog carefully. You will see that the most effective ones are very simple designs, ones that indicate quickly what is available. So keep your custom designs that simple.

Some of you may be selling in farmers’ markets or pumpkin patches. Have you ever thought about getting the idea of pollination of food crops out to the public? Remember, to most people the honey bee represents two things – honey and sting. We need to bring the relationship of honey bees and fruits, berries, vegetables to the consumer. You can have some stickers printed by the Produce Promotions. Each pumpkin, watermelon, or box of berries can display a “honey bee pollinated” sticker.

You can, of course, find signs and banners close to home. Look in your telephone book yellow pages under signs, banners, and flags. You may find a place close to home that will be happy to work with you to make a custom banner featuring your honey.

Those of you who have a Kinko’s near may want to investigate what is available there. You can have a small sign, large sign, banner, magnetic sign for your truck, some made while you wait, others ready in about a week. It is quite an

assortment.

To make best use of Kinko’s you will want to design your sign or banner on your computer or have someone do it for you. (Keep it simple, remember!) With your design on a disc or CD you can then go to Kinko’s. How about having a 2x3 foot sign printed up and laminated? Of course with lamination, corner grommets for hanging it up will have to be put in by you. However, with lamination, your sign is quite rainproof. The cost is reasonable enough that you can have laminated signs for different occasions.

Now, for those who like to go exploring on the computer, just type in “banners” or “advertising displays” and search the Internet.

You will discover more companies that create banners and other materials for advertising. Undoubtedly you will discover other sites.

Now that you have found some ways to announce your honey and hive products, it is time to consider how to create effective, meaningful signs. Here you must understand that your customer is not a beekeeper.

In the USA realistic bees are not a good way to portray a bee. A cartoon bee is acceptable – cute, funny, charming. The message must be that bees are nice. However, it is not necessary that your sign or banner have a bee.

An ordinary white bee hive is, again, not well understood by the non-beekeeping public. Yes, it may be somewhat recognizable, but it is a mystery to non-beekeepers. Besides it is really a very boring item – a white box. Take a look at the graphics the National Honey Board uses to promote honey. You will not see a basic white bee hive. The National Honey Board does have some nice clip art that is simple in design and could be used on a banner or sign.

The old-fashioned skep, for some reason, does convey the message of a beehive, perhaps because it has been used in many

different contexts. It is a pleasant shape and lends itself to overprinting with large letters.

The size of letters is very important. So many look at a “big” letter on a piece of paper and think it is big enough to be seen. Here is something you can try. Yes, it may turn out to look like the familiar eye chart you see in doctor’s offices but it will show you what size letters need to be. Take a piece of paper and print the word “honey” on it in letters three inches high. Now put this on a pole or tree on the roadside. Get in your car and drive past the sign. Surprised? Now go back and make another sign with letters 6 inches high. Drive past that one. What seems big enough while being printed turns out to be insignificant when used as a roadside sign.

You can get an idea of the size lettering used on banners by studying the samples of banners in the Produce Productions catalog. The banners are three feet tall. You can estimate the height of the letters on the Fresh Honey banner. They are probably about 10 inches tall.

What about colors? A white background with dark or black letters is the most visible. Dark green, dark blue, dark brown can be used. If you choose a background color, such as yellow, keep the print color dark. Although you may think a background color of red is dramatic, black print on red just will not show up. It is best to keep your background light and the print dark.

Words such as “fresh honey” or “local honey” attract customers. If you are certain of the variety of your honey and it is well-known locally, then you could use that name, such as “fireweed honey” If your specialty is comb honey, that may well be worth a big sign, one that will be seen from other parts of the fair.

The produce booths are doing a wonderful job of promotion with their pennants, banners and signs. Don’t let honey be hidden quietly. Announce your product loudly and in a professional manner. Your bees will be proud of you. **BC**

Ann Harman keeps looking for signs anywhere near her home in Flint Hill, VA.





SMOKERS

Past Pieces

The Rise Of The Mighty Clark Smoker



Wyatt Mangum

In the last article, we saw that by 1879 Root's bee supply business had started selling two kinds of cold-blast smokers, the Simplicity and the Clark. In a sense, these two smokers competed for beekeepers who had a preference for the so-called cold smoke. By looking through the old Root catalogues, we can track the rise and fall of each smoker's popularity. (But keep in mind, I don't have all of the Root catalogues, so the dates should be regarded as approximations. Also the catalogues were sometimes issued more than once a year.)

Beginning with the catalogue for November 1, 1880, Root explained,

"During the past season, we have sold two styles of smokers, of our own make, and sales of them have amounted to several thousand. The Simplicity seems to be the general favorite, although we have sold a good many of the Clark cold blast."

Perhaps Simplicity's early lead was merely because it had been offered first. In addition, this catalogue only showed a picture of the Simplicity, which of course would help sustain its advantage.

However, Clark smokers sold briskly, and by the August 1, 1882 catalogue, Root had observed a shift, "At present I believe the Clark smoker has the preference." Reflecting this trend, the catalogue showed a picture of a Clark smoker; the Simplicity's picture was absent.

Although the price for one Clark smoker was still a respectable 75 cents, as a harbinger of things to come, Root now offered them at wholesale prices, five smokers for \$2.00 or 100 for \$35.00. (These quantities were probably sold to other bee supply businesses that acted as distributors.)



Two Clark smokers in my collection flanking an old clock. By the way, on the clock note the skep painted on the glass. Remarkably it's painted from the back side of the glass, though you see it from the front side, a technique called reverse glass painting. (In a future article, we will learn more about these clocks.)

As sales of the Clark smoker rose, the Simplicity fell far behind. And finally by January 1886, the poor Simplicity had met its demise

with its production stopped after only about five years. That short production time now increases their rarity, and those surviving the 120 or so years until today should be carefully preserved. As a rough measure of this rarity, in about 30 years of collecting smokers, I have only found three Simplicities of the cold-blast type and only one of the earlier hot-blast type.

In stark contrast to the Simplicity's demise, sales of the Clark smoker continued to skyrocket. In 1886 the same catalogue reported,

"For the past few years, we have sold only one style of smoker, of our own make, and sales of them have amounted to many thousands.... During 1882 we sold over 3,000, in 1883, over ten thousand, and in 1884 over twenty thousand [his emphasis]."

As a sign of this volume demand, Root also added another category to the wholesale lots. A whopping 1,000 Clark smokers could be purchased for the tidy sum of \$300.00. That's just 30 cents each! And the stuff of dreams for bee smoker collectors everywhere!

As the orders poured in, Root described this delightful situation in the *Gleanings in Bee Culture* for June 1884, "The trade that has started in these smokers is simply wonderful.... Orders for 100 are quite common." Apparently the advantages of the smoker spread by

word of mouth or by seeing a neighbor using one. Some beekeepers sent in orders for Clark smokers, but didn't even know what to call it. So they just made up all sorts of names. As Root recalled,

"Yesterday one of the clerks came to me and wanted to know what a man meant by sending for a 'bee-tamer.' 'Why', said I, 'that is plain English; he wants a smoker.'"

In addition to word of mouth, ads in the beekeeping press also promoted the smoker. The cartoon at the top of the page shows an especially creative one. All this promotion led to a remarkable result. By 1894, Root had sold a staggering 150,000 Clark smokers.

I think, as a result of this large sales volume, finding a Clark smoker, even today, is still quite likely. Fifteen of them have found their way into my collection (see Figure 2). I purchased some of them because they were included with other beekeeping antiques in small collections, which I had bought as "all or nothing." I have found others at flea markets and antique shows. (One might think that these smokers are just all duplicates, but soon we will see that is not necessarily correct.)

Other people have had some luck at finding Clark smokers too. For example, on several occasions at state and regional meetings, beekeepers have been invited to bring in their antique beekeeping equipment for me to identify. In this humble version of the popular "Antiques Road Show" as seen on public television, I do a "Beekeeping Antiques Road Show" where I identify and give the history of old beekeeping equipment. It's a fun and entertaining way for beekeepers to learn about their history and to understand how the old equipment worked.

Perhaps they found those antiques when buying an operation from some old beekeeper who "didn't believe in throwing anything away." Or in some cases, those old cherished historical pieces, which could be an old-style smoker, hive or extractor, were handed down typically from great-grandfather to grandfather to father. Now those beekeepers who inherited these family heirlooms want to know more about them. That gives them a glimpse

into their ancestor's style of beekeeping and makes a connection with their family's past.

I have done several road shows and every time, in the midst of all that odd-looking beekeeping paraphernalia from days long ago, there has always been one or two Clark smokers. So while I would not say these smokers are common, with luck and perseverance they can still be found. If you happen to have a Clark smoker, you may want to compare it to the information in this article and the next two articles. Hopefully that will give you a better understanding of your particular Clark smoker. However if you don't have a Clark smoker, don't worry; you can still enjoy how ingenious beekeepers can



A Clark smoker with a hook. Note also absence of the external spring on the bellows that we saw in earlier articles. As best as I can tell, roughly around 1900 manufacturers started making Clark smokers with internal

when trying to make this smoker work better.

One small complication here is that since the Clark smoker was not patented, other manufacturers besides Root made the smoker, though I think he made most of them. Some other Clark smokers were even homemade. Unless copied exactly like Root's, which I think is unlikely, these other smokers should be a little different from Root's version. For example, one unknown manufacturer made a Clark smoker equipped with a hook on the bellows so the smoker could be suspended from the side of the hive, always within easy reach (see Figure 3). I am pretty sure this one is not from the Root Company, because in addition to the hook (which

I have not seen on Root's version), the manner of attaching the metal cone to the bellows is different from Root's technique. This one uses little metal straps.

In contrast, Root used four wood screws with their heads inside the cone (with the fire) and their ends securely twisted into the wood of the bellows. Looking in the space between the cone and the bellows you can't easily see the exposed threads of the screws because they are covered up by small pieces of rolled up metal. (That method of attachment dates back to the first Simplicity smoker Root ever produced.)

So while that prominent, ever so distinctive, cone identifies the Clark smoker from all others, there are other subtle manufacturing styles besides Root's. But when it comes to subtle styles of the Clark smoker, that's only a small part of the story. In the heyday of the Clark's popularity, Root's version had some problems (as did those from other producers). In solving these problems Root came out with different versions, and because he was so forthright, he recorded these changes in his *Gleanings in Bee Culture*, leaving a wonderful historical record of how this smoker evolved.

Now we can go back to these old periodicals and study his changes, then compare them with the original smokers in my collection. In some cases, a particular Clark smoker can even be dated to within a few years of its production because that version didn't last very long. This historical detective work gets pretty interesting too and along the way leads to some unexpected finds. For example, in one Clark-smoker version, Root put a little screw-on cap on the wooden board of the bellows. What?! A smoker with a screw-on cap - on the bellows - whatever for! Well, next time we'll solve this intriguing micro-mystery as we delve further into the evolution of the Clark smoker. **BC**

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? DO YOU KNOW ?

Harvesting & Bee Products

Clarence Collison
Mississippi State University

Each year as the beekeeping season comes to a close, most beekeepers turn their attention to harvesting, extraction, processing and marketing the honey crop. Beekeepers may have to spend time developing new market outlets in their region. To be effective in developing new markets, it is important to be very knowledgeable about the product you are trying to sell,

produce high quality honey and possibly offer the consumer a more diverse line of products. The production of other products from the hive, such as beeswax, may assist in developing or increasing consumer appeal.

Take a few minutes and answer the following questions to determine how well you understand these important topics.

The first nine questions are true and 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 unless otherwise indicated.

1. ___ The Jenter system is used in the clarification of honey.
2. ___ Honey is predigested and goes directly into the blood stream.
3. ___ Queen excluders are normally used in the production of comb honey.
4. ___ Honey can be used to make beer and vinegar.
5. ___ Honey is sweeter than sugar.
6. ___ Gluconic acid is the predominant acid in honey and gives it its low pH.
7. ___ In order to sell "organic" and "kosher" honey, they have to be certified.
8. ___ Hobby beekeepers are required to have nutritional labels on their jars of honey.
9. ___ Colonies used for comb honey production should have both an upper and lower entrance.

(Multiple Choice Questions)

10. Round comb honey sections hold about ___ ounces of honey, whereas, ___ four by five inch rectangular sections hold about ___ ounces of honey.
 - A. 10
 - B. 6
 - C. 8
 - D. 14
 - E. 12
11. ___ Antibiotic recently found in imported Chinese honey.
 - A. Chloramphenicol
 - B. Streptomycin
 - C. Trifloxystrobin
 - D. Epoxiconazole
 - E. Chlorothalonil

12. ___ The best wax temperature for pouring beeswax candles is in the range of:
 - A. 180-185°F
 - B. 145-150°F
 - C. 205-210°F
 - D. 170-175°F
 - E. 160-165°F
13. Please explain why not all geographical areas are conducive to producing high quality comb honey sections. (2 points)
14. What must a beekeeper do to the basswood sections prior to bending them to form the individual sections? (1 point)
15. Please identify the following pieces of equipment. (4 points)



A



B



C



D

16. In a recent seminar, the following statement was made "Avoid storing honey at temperatures between 50 to 59°F. How would you explain this statement to a beginning beekeeper or new consumer? (1 point)
17. Fermentation is caused by the action of sugar-tolerant yeasts. What is the source of these yeasts that are typically found in all honeys? (1 point)
18. Name two ways beekeepers remove wax and other impurities added to honey during the extraction process. (2 points)
19. What is the source of the best grades of beeswax in a beekeeping operation? (1 point)

ANSWERS ON NEXT PAGE

?Do You Know? Answers

- 1. False** The Jenter system is a modern plastic queen cell producing device. The queen is confined in a cage for a period of time and lays eggs in a hybrid plastic/natural wax cell, the base of which can be removed from the back of the cage. This allows eggs/young larvae to be transferred without having to be picked up and moved with a grafting tool. The cells are removed containing either an egg or young larvae and a cell base is added to complete the plastic queen cell. The completed cells with an attached cell base are put on a bar and given to a cell building colony. The Jenter system is used in the rearing of queens, not clarification of honey.
- 2. True** The sugars of honey are primarily monosaccharides (glucose and fructose) which means they require no digestive change before they can be absorbed. In comparison, cane and beet sugars (sucrose, a disaccharide) must be broken down into simpler sugars by digestive juices before they can be absorbed into the blood stream and assimilated into the tissues. Thus, the glucose and fructose in honey are a ready source of energy. The glucose in honey is quickly absorbed by the body. Fructose is absorbed at a much slower rate and is able to maintain the blood sugar level. Thus glucose provides an immediate source of energy and the fructose a more lasting supply.
- 3. False** One does not use a queen excluder when producing comb honey. When there are 10 frames with their wide top bars in the brood nest, the frames themselves, in part, will act as an excluder. Equally important is rotating the comb honey supers as new supers are put onto the colony. Queens will rarely, but sometimes, lay eggs in comb honey sections. This may be avoided by placing the supers with new foundation on top of the brood nest and under the other comb honey supers (bottom supering). The fullest super is kept on top where it is also easiest to remove.
- 4. True** Honey can be used to make both honey beer and vinegar. Beers of many varieties may include honey as an ingredient, but usually 'honey beer' is either brewed as a pure honey beer or sugar is the basic ingredient and honey is added with the sugar. Honey vinegar is produced from diluted honey by allowing it to undergo natural fermentation. Through the fermentation process, the sugars found in honey are made into alcohol and then the alcohol is converted into acetic acid. The natural process also requires a common but specific bacteria.
- 5. True** Honey sugars have approximately 25% greater sweetening power than cane sugar. One pound of honey containing approximately 17% water is equivalent to about 0.95 lb. (15.25 oz.) granulated sugar. A tablespoon of honey contains approximately 62 calories and a tablespoon of sugar 50 calories.
- 6. True** The acidity of honey (low pH) is largely masked by its sweetness. The acids, of which gluconic acid is the predominant one, contribute to the honey flavor complex and also contributes to its stability towards micro-organisms.
- 7. True** The word organic is no longer just an adjective. Under the law, beekeepers who produce or handle honey products that are to be sold, labeled, or represented as 100% organic or made with "organic ingredients" must be certified. The Hebrew word "kosher" means proper or fit. Kosher food must meet all the requirements of kosher dietary laws. For products including honey, to be acceptable as kosher, they have to be certified by a recognized rabbinical authority whose approval is shown through recognized symbols on the label.
- 8. False** Nutritional labeling is mandatory for most foods. Products sold by companies qualifying for the small business exemption are one exception to this requirement. Small business exemptions are available to small companies (fewer than 100 employees) for products sold in small volume (fewer than 100,000 units per year). However, if you use a descriptor such as "healthy" on the label, there must be a nutritional label on the product (even if the product is otherwise exempt).
- 9. False** Comb honey producing colonies should have a single entrance. Upper entrances should be closed because bees may enter the section supers laden with pollen and propolis and stain the new sections.
 - 10a.C) 8
 - 10b.E) 12
 11. A) Chloramphenicol
 12. A) 180-185°F
 13. To produce high quality comb honey sections you need an area with an abundance of honey plants and a rapid, intense honey flow.
 14. Prior to bending the individual basswood boxes into comb honey sections, the joints need to be moistened with water to soften the wood. A wet rag is used on each joint and some water is dripped down each groove from the top.
 15. A) Hackler Honey Punch
B) Cappings Scratcher or Uncapping Forks
C) Uncapping Plane
D) Conical Bee Escape Board
 16. Avoid storing honey at temperatures between 50° to 59° because this temperature range encourages granulation and accompanying fermentation.
 17. Osmophilic yeasts occur naturally in nectar, on the bodies of bees, in apiary soil, in honey houses and on honey-extracting equipment.
 18. Using baffles in a sump tank to capture impurities. Straining liquid honey through a fine mesh material such as nylon. Use of a settling tank, skim impurities from the top after allowing the honey to stand for several hours.
 19. Fresh honey cappings

There were 25 points in the test this month. 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

GLOBAL NEWS

NOVEMBER, 2003 • ALL THE NEWS THAT FITS

Country Of Origin Label, Too EU'S NEW RULES

New honey regulations have come into force in England and similar legislation will be put in place shortly in Northern Ireland, Wales and Scotland.

The regulations implement a European Community (EC) directive that was adopted throughout mainland Europe in 2001.

The new harmonized rules reserve sales names for honey products that comply with certain specifications. They also lay down certain additional labeling requirements.

There is a new requirement to label the country or countries where the honey was harvested. In the case of blended honeys the label must indicate if any or all of it came from the EC. Terms such as "blend of EC honeys," "blend of non-EC honeys" or "blend of EC and non-EC honeys" are considered appropriate.

Honey that has been finely filtered will have to be labeled as filtered honey and there are new labeling requirements for baker's honey.

Filtered and baker's honey can not be labeled with additional information on the floral or vegetable origin; regional or topographical origin; or specific quality criteria.

It is common practice in the industry to filter honey under pressure in order to remove unwanted matter from the honey. As a result of the way in which honey is produced and harvested, a certain amount of unwanted matter (e.g., small pieces of comb, dead bees etc.) is effectively unavoidable. It will still be acceptable to treat honey in this way without requiring it to be labeled "filtered honey."

However, where fine filters are used such that a significant amount of pollen is removed –

such as where honey is finely filtered to improve the shelf-life and clarity, the product will need to be described as "filtered honey" and not simply as "honey."

Honey that contains added ingredients may not be described as honey. The purpose of this is to maintain the purity of honey, which is perceived by the consumer to be an entirely natural product with nothing added or taken away.

There is also some tightening of the limits for certain specific criteria and honey must now meet a new lower limit of 40mg/kg or less for any hydroxymethylfurfural (HMF) present. HMF is a sugar-breakdown product and is used as indicator of honey quality since it increases with temperature and storage time.

The HMF rule does not apply to honey that comes from tropical climates or their blends.

In addition, all products covered by the regulations must also comply with the general provisions of the Food Safety Act 1990, under which the majority of food legislation in Britain is made, and the general rules governing the labeling of foods laid down by the Food Labeling Regulations 1996.

-Alan Harman

NHB PASSES, AGAIN

In September the U.S. Dept. of Ag released a *Summary of Referendum Results* from the recent National Honey Board Referendum. In a July-August referendum, honey producers and importers voted to continue their Honey Research, Promotion, and Consumer Information Order. Of 4,060 ballots mailed 1,237 ballots were received (1,212 valid) – 30.47% participation rate.

ABF MEETS IN FL

The program for the American Beekeeping Federation's 2004 convention will include top presenters covering the latest and most important topics for beekeepers.

The ABF will meet in Jacksonville, Fla., Jan. 14-17, at the Sawgrass Marriott Resort and Beach Club, which is actually on oceanfront highway A1A south of Jacksonville at Ponte Vedra Beach (904.285.7777)

Speakers and topics are expected to include: Fran Boyd, Larry Yee, Anita Collins, and Judy Chen, Gloria DeGrandi-Hoffman, Gordon Wardell, Eric Mussen, Frank Eischen, Patti Elzen, Tom Rinderer, John Harbo, Dick Turanski, Dan Mayer, Robin Mountain, Tom Sanford,

Laurence Cutts, Jim Tew and Roger Hoopingarner.

Plus, don't forget the Educational Workshops, on Saturday morning, Jan. 17: Making Creamed Honey, Accessing Contract Labor, Candles and Beeswax Creations, Effective Government Relations, Queen Introduction Techniques, Alternative Mite Controls, Update on Foulbrood Controls, Lessons in Meeting Organization and a Beginning Beekeeper Short Course, Saturday afternoon.

For the latest convention details, contact the ABF Office, P.O. Box 1337, Jesup, GA 31598, 912.427.4233, fax 912.427.8447, e-mail: info@ABFnet.org, or visit www.ABFnet.org.

AHPA MEETS IN TX

The American Honey Producers will hold their 35th Annual convention at the Omni San Antonio Hotel, 9821 Colorado Avenue, San Antonio, January 6-10, 2004, (210.691.8888 for reservations).

Speakers include a session with the Apiary Inspectors of America who are holding a joint meeting, plus Baldwyn Torto, Lambert Kange and Jamie Ellis on SHB, Terry Fehr on Nucs, Johanna Fourie on Labor, John Milam, Pattie Elzen, Mark Feldlaufer,

Tom Rinderer, Bob Danka, Jeff Harris, John Harbo, Glorie DeGrandi Hoffman, Charlie Harper, Jeff Anderson, Jack Thomas, Bruce Boynton, Kelvin Ade, Paul Jackson, Jeff Pettis, Malcolm Sanford, John Skinner, Keith Delaplane, Carl Wenning, plus a Packer/Importer Board session with Nick Sarggentson, Jerry Probst, Dwight Tew, Ernie Groeb, Hans Bodecker and Bill Gamber.

For information contact Karentubbs@mississippihoney.com

Overall, 59.24% of voters favored continuance representing 61.37% of pounds voted.

The honey research and promotion program is administered by the National Honey Board. It is funded by an assessment of one cent per pound on domestic and imported honey. The Order is authorized by the Honey Research, Promotion, and Consumer Information Act. USDA's Agricultural Marketing Service conducted the referendum by mail ballot.

NZ NEWS

Medicinal Honey Honey New Zealand, working with U.S. partner South West Technologies, has developed a wound dressing that uses unique manuka factor (UMF) honey.

The soft moisture-absorbing gel product combines all the wound healing qualities of UMF honey in a comfortable form for application. The product is a soft gel sheet that allows the dressing to remain continually in contact with the entire wound.

Trials showed the dressing inhibits growth of five major wound infecting bacteria. Other benefits are its absorption rate – three times that of others – and it does not tear the wound when changed.

Honey New Zealand is working with the New Zealand Crop and Food Institute and East Cape landowners in the East Cape region of the country – a major UMF production area – to develop the sustainable farming techniques for the manuka plant.

“Developing a consistent guaranteed UMF honey product is essential for us to be able to supply global markets,” Honey New Zealand chief executive Kerry Paul said. *Alan Harman*

Record Crop Meanwhile, New Zealand's 2,790 beekeepers produced a record 12,252 tonnes of honey last year.

The Ministry of Agriculture said a good kiwifruit harvest and improved weather saw production reach an average 89.9 pounds of honey a hive compared to the average over the last six years of 63.05 pounds.

It said prices for ordinary honey were about NZ\$4 to NZ\$4.20 a kilogram (NZ\$1.82 to NZ\$1.91 a pound), best grade clover honey NZ\$4.50 a kg, and rewarewa honey NZ\$5 a kg. The bulk price for manuka honey was NZ\$10 a kg. Manuka honey with a high level of antibacterial activity sold for as much as NZ\$27 a kg. *Alan Harman*

Varroa Still A Mess Commercial apiarists in the New Zealand Bee Industry Group have reluctantly agreed to a Ministry of Agriculture proposal to allow the movement of treated hives into the Hawke's Bay and Wairarapa regions.

“Beekeepers hoped for more stringent controls around hive movements into the area but were told such controls created real technical difficulties for the ministry,” lobby group chairman Milton Jackson.

The ministry said the *Varroa* movement control line through the middle of the North Island was gradually being compromised and was likely to be removed. It said the line barring the southward movement of bees and apiary equipment had succeeded in slowing the spread of the mite to the Taranaki, Wanganui, Wellington, Wairarapa and Hawke's Bay regions. *Alan Harman*

AFB Almost 350 hives were destroyed in South Australia after an outbreak of American Foul Brood.

The beekeeper involved faces the loss of his business but he is getting little sympathy from other apiarists who said the outbreak would not have occurred under good management.

They said while American Foul Brood is a very devastating bacterium it was only spread generally by very bad business practices. They said the outbreak was a great concern to the industry and to those who receive pollination services. - *Alan Harman*

Pollination The Australian honey bee contributes more than A\$1.7 billion a year to the country's agricultural industry – probably more.

More than 65% of horticultural and agricultural crops introduced to Australia since European settlement in 1788 require honey bees for pollination.

Rural Industries Research and Development Corp. researchers Jenny Gordon and Lee Davis said in a report the A\$1.7 billion would be the cost if a catastrophe wiped out all commercial and wild bees.

They based their estimate on the production and value of 35 crops which largely depend on honey bee pollination.

However, the loss would likely be higher because they did not take into account a wide range of pastures which also are pollinated by bees.

It said the greatest losses would be in the apple industry at A\$298 million, followed by the onion industry at A\$242 million and carrot production at A\$177 million). *Alan Harman*

Mostly Supported

PIB IN MOTION

On July 8th a proposal for a new packer/importer National Honey Board program was delivered to USDA with letters of support from Steering Committee members that represented the American Beekeeping Federation (ABF), the American Honey Producers Association (AHPA), the National Honey Packers and Dealers Association (NHPDA), Sioux Honey Association (SHA), the Western States Honey Packers and Dealers Association (WSHPA), and independent honey packers.

On September 9th, one week after announcement of the referendum results, six out of seven members of the Packer/Import NHB Steering Committee signed

a document that went to USDA, communicating our continued intent to transition to a packer/importer program as soon as possible. One organization represented in the steering committee, AHPA, communicated earlier that they have taken a neutral position and did not oppose the forward movement by the Importers and ABF.

Dr. Ken Clayton, Association Administrator of USDA/AMS stated that it should be doable to hit a target date of end of October for publishing of the Order in the Federal Register. Publishing of the Order would initiate an industry comment period.

BEE ALERT TAKES OFF

University of Montana administrators are hoping land-mine-seeking bees will make some money, not just honey.

The Montana Board of Regents approved a licensing agreement between a local company and the University of Montana in what could be the first step toward making honey bees a staple of Montana's economy.

The license, approved at the regents meeting in Billings last week, contains provisions for UM to receive between 4 and 8 percent of revenue generated by Bee Alert Technology Inc., which uses bees to seek out land mines.

“Just the land-mine detection business alone could quickly

become an important Montana business,” UM biology professor Jerry Bromenshenk said.

The new technology has the potential to save thousands of lives and create hundreds of millions of dollars per year in contracts for land-mine surveys and mapping, he said.

Bromenshenk, who co-founded Bee Alert Technology with four other UM employees, said Montana could reap the economic benefits of its research.

In addition to land-mine detection, the researchers are working to improve crop productivity by increasing the efficiency of bee pollination and beekeeping.

OZ QUEEN IMPORTS

There is an upsurge in queen importations to Australia with most coming from Europe, according to a new report.

The report by Frederick Benecke for the Rural Industries Research and Development Corp. said the increase is driven by the efforts of Australian queen exporters to meet the demands of their customers.

“In particular breeding from European imports of Italian bees for the European market and breeding from European imports of Carniolan bees for the Canadian market,” the report said.

Australia has traditionally imported most of its breeding

stock. However with stricter and more expensive quarantine protocols, importations waned for a period and have fluctuated over recent years.

Queen bees could be imported relatively freely from Europe until 1964 and from U.S. until 1983.

Now imported queens are kept at a quarantine facility in Sydney. They are able to lay and their brood is tested for the presence of disease. If the queen and her brood are disease free, larvae from the quarantined queen are released to the importer. The queen is never released from quarantine and is killed when the importer is finished with her.

Alan Harman

OBITUARIES



Professor Harry H. Laidlaw, Jr. passed away September 19, 2003 at 96 years of age. Professor Laidlaw was recognized worldwide as the father of honey bee genetics and breeding. He was author of many scientific articles and four books on instrumental insemination, breeding, and genetics. He was Professor Emeritus of Entomology at the University of California, Davis, where he served on the faculty from 1947-1974.

Professor Laidlaw, "Harry" to everyone who knew him, was born in Houston, Texas on April 12, 1907. He began keeping bees when he was "4 or 5 years old" with his grandfather Charles Quinn, a civil engineer and avid beekeeper who raised queens. Quinn was passionate about controlling the mating of queens in order to breed better bees, a passion that infected young Harry. By the time he was 16 years old, Harry had figured out a way to mate queens by holding the drone in position behind a virgin queen and stimulating him to evert his genitalia into her. This method was affectionately known as the "Quinn-Laidlaw hand mating method." As a teenager, Harry travelled to beekeeping meetings in the South East (they were living in Virginia at this time) demonstrating this, the first, method of controlled queen mating.

In 1923 the family moved to Florida. Harry was now 16 years old and worked for a beekeeper in LaBelle named C. C. Cook delivering honey to retail outlets throughout Florida and into Mississippi and Alabama. While in Florida, Harry also was a district apiary inspector and inspected bees in several Florida counties.

The family moved to Louisiana in 1927 and Harry got a job working for the State Department of Agriculture raising queens to resupply beekeepers who lost their colonies in a catastrophic flood. Soon after, he was employed once again as an apiary inspector, for the State of Louisiana. In 1929, he enrolled in the Louisiana State University in Baton Rouge. This is remarkable because Harry never finished grade school! While a student at LSU, Harry worked for the U.S.D.A. Southern States Bee Culture Field Laboratory where he greatly impressed the resident scientist Dr. Warren Whitcomb.

Upon completion of his Bachelor's degree in Entomology, Harry was encouraged by Whitcomb to work for a Master's degree. For his research topic, he performed a detailed morphological study of the reproductive tract of the queen honey bee in order to better understand why all attempts at instrumental insemination up to that time had been doomed to failure. Researchers in the USDA had already developed an apparatus to hold the queen and inject semen into her sting chamber, but they had little success in getting queens adequately inseminated. Harry discovered the "valve fold" a tongue-like structure in the median oviduct of the queen that was preventing the proper placement of the semen-filled syringe during insemination.

Harry completed his Master's degree in Entomology in 1934 and moved on to the University of Wisconsin to work on his Ph.D. in Entomology and Genetics. His research focused on developing a useful method for instrumentally inseminating queens. He developed a method to bypass the valve fold, allowing the semen to be injected into the appropriate location in the median oviduct, introduced anesthetisation of queens (which stopped them from wiggling while trying to insert the syringe), redesigned the hooks developed by W. J. Nolan for opening the sting chamber of the queen, and redesigned the tip to prevent the backflow of semen during injection. The combination of these methods resulted in a successful system of instrumental insemination that enabled controlled

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Donald J. Strachan, 78, of Yuba City, California died August 29, 2003 at Rideout Memorial Hospital.

On August 8, 1925, at Rideout Hospital, Donald James Strachan was born to James Strachan and Blanche Dahlstrom Strachan. The Strachan's were originally from Scotland and the Dahlstrom's from Sweden.

Don was married to Alice Echols Strachan for 53 years. Alice preceded him in death on May 19, 2002. Don had two younger sisters: Joyce Priem who preceded him in death, and Janet Rankin from Idaho. He had three daughters, Debbie Strachan and Valeri Strachan-Severson of Yuba City and Donna Haile of Dixon, California, nine grandchildren and one great grandson.

Don attended Tierra Buena Grammar School, Franklin Elementary School, and graduated in 1943 from Sutter High School, where he played tuba in band, and was a member of Future Farmers of America. In Don's youth, he worked in the bees for his cousin, George Smith, and also kept livestock through FFA. He served during World War II in the Navy on the USS Baltimore in the Philippines and surrounding area.

After the Navy Don continued working for George until 1953, when he purchased 600 hives from a retiring beekeeper in Chico, California. In 1954 Don bought "Caucasian Unlimited" a queen raising business, from Tom Davis. Thus, the beginning of Strachan Apiaries. By that time Don & Alice had three daughters. During those early years, he sometimes worked three jobs at once to provide for

the family, juggling the bee business, raising and selling chickens, and working at a rice dryer in the Fall season.

In 1961 Strachan Apiaries moved to their present location on Tierra Buena Road. In 1980, Don began a new venture with Everett Hastings of Canada and started breeding the Carniolan line of queens and bees. This breed of bees continues to be the backbone of Strachan Apiaries, Inc. Over time the queen breeding stock has evolved and includes the New World Closed Population Breeding Program that was developed by Susan Cobey of Ohio State University. "Time Tested, Industry Proven," is the motto of Strachan Apiaries, Inc. when it comes to queen and package bee production.

Don worked hard, long hours building the business, and as he liked to remind his employees, lifted everything "by hand, no forklifts back then." Eventually more employees, trucks, warehouses, and forklifts were utilized until the business has grown to approximately 10,000 hives, with a busy pollination, package bee and queen breeding business. Since 1975 Don's daughter, Valeri Severson, President of Strachan Apiaries, Inc. has closely worked with her dad. When Don retired in 2001 Valeri took on the task of managing the business. In previous years, Debbie and Donna worked in the business office.

Don was past President of the California State Beekeepers Association during its centennial year in 1989 and was an honorary lifetime member. He was also a member of the American Beekeeping Federation, the American Honey Producers Association, the California Bee Breeders Association and the Alberta Beekeepers Association.

Don was an elder and trustee at Gray Avenue Christian Church for many years and loved teaching adult Sunday School classes. He was instrumental in the development of Noah's Ark Preschool, located at the church.

Don loved hunting and fishing. Perhaps that's an understatement. Even in the hospital, he was counting before surgery how many weeks the doctor said recovery would be so he could

Continued on Next Page

mating and selective breeding of bees. This was the first insect for which artificial insemination was developed and has enabled a huge body of research on breeding and behavioral and developmental genetics.

Following the completion of his Ph.D. in 1939, Harry worked for the USDA Bee Research Laboratory in Madison, Wisconsin, taught at a small college in Indiana, and served as Apiarist for the State of Alabama. In 1942, he was inducted into the US Army, received a commission, and served as an Army Entomologist for the 1st Service Command in Boston, Massachusetts. This is where he met his wife of 57 years, Ruth Collins Laidlaw.

In 1947, Harry and Ruth moved West where Harry joined the Department of Entomology, University of California, Davis. In 1950, he joined forces with J. E. Eckert and published the first edition of *Queen Rearing*, which became the standard reference worldwide. He published the definitive book on instrumental insemination in 1977. He continued to develop better methods of queen rearing and instrumental insemination while he worked at breeding bees for commercial beekeeping. His queen rearing books were greatly influenced by his observations of successful queen producers.

Retirement came in 1974, but, he never really retired. He wrote two books on queen rearing, breeding and genetics. The second was completed and published when he was 90 years old. He also continued to modify the instruments used for instrumental insemination. Harry wanted the in-

struments to be simple and inexpensive so that they were accessible to everyone. Harry set out to design an instrument that easily could be built from parts available from plumbing and hardware catalogs, for under one hundred dollars. He succeeded and published an article about how to make the instrument, but he still wasn't happy. So, in collaboration with M. E. Kühnert he modified the queen holder and dorsal hook into a single structure that resulted in a revolutionary new design. They published a description of the new apparatus in 1994; Harry was 87.

Harry served as a consultant with the Egyptian Ministry of Agriculture in the 80s, establishing a closed population breeding program. His breeding methods were adopted internationally by commercial and government programs.

Harry was very fortunate. Not only did he live a long, healthy, and fruitful life, his accomplishments were recognized while he could enjoy the accolades. He was the recipient of many, many awards. In November, 2000, the UC Davis Honey Bee Research Facility was renamed in his honor, the Harry H. Laidlaw, Jr. Honey Bee Research Facility.

A visit with Harry Laidlaw was on the travel itinerary of bee researchers world wide. Travellers passed through Davis to see Harry on a regular basis. His door was always open and he greeted everyone with his infectious charm and enthusiasm: always polite, always encouraging, always humble. His contributions to apicultural science will endure, and so will his memory.

STRACHAN ... Cont. From Pg. 59

see if he would be well by hunting season in Montana. Months in advance he and his friends would plan the trips they would go on, and have a wonderful time even when they didn't bag any elk or catch many fish. He loved to come back from those trips and tell his family of their adventures and "the ones that got away"

Most importantly, Don's children and grandchildren learned of his faith in the Lord

Jesus Christ and dependence on Him as their Savior. His and Alice's faith in God was strong and deep, and they showed that faith by generously giving not only time but money, even when people warned they were giving too much of their income. And they never were wanting, in material or spiritual possessions. The beekeeping family is richer for having had Don Strachan among us these short 78 years.

Canada Looking For Standards U.S./CANADA BORDER OPENS?

The border with the continental U.S. has been closed to the movement of bees into Canada for phyto-sanitary (health) reasons since 1985 in eastern Canada and 1987 in western Canada. The Canadian Food Inspection Agency (CFIA) is the federal agency responsible for cross border movement of agricultural commodities. If the Canadian apiculture industry wishes to have importation regulations modified or extended, a presentation must be made to CFIA with whom the ultimate decision rests. According to Brian Jamieson, Chief Veterinary Negotiator, International Trade, CFIA, "unless there is an emergency situation, the change would require national industry approval."

In trying to find a means to this consensus, Medhat Nasr, Alberta Provincial Apiculturist developed a set of protocols to address the major concerns about importation of honey bees to Canada from the U.S. The Alberta Beekeepers Association (ABA) placed this proposal before the Canadian Honey Council (CHC) board of directors in March 2003 and asked for assistance to develop a national consensus. It was late in the import season to attempt discussions on developing a national protocol however the CHC moved quickly to disseminate the information and work towards a consensus view.

There were several issues that had to be overcome. The CHC is an association of diverse beekeepers with differing perspectives, a variety of management systems in a wide range of climatic areas across the country. Some members raise queens and many do not. Some produce large quantities of honey and others are mainly in the pollination industry. It is a difficult task bringing together these divergent views. Each of the CHC delegates is expected to present the message to their associations but personal views, old grievances and even presentation skills can influence the interpretation. Trying to achieve a consensus via phone conferences is a difficult process and when the issue is as contentious as border closure it can be doomed to failure without a skilled facilitator.

As a first step the CHC requested technical advice from the import committee of the Canadian Association of Professional

Apiculturists (CAPA). They worked with Dr. Nasr in helping to review, clarify and modify the protocols so a scientifically sound rationale was provided for the importation process. Using these protocols, it is believed that any importation of queens would provide low risk healthy European honey bee stock.

The final protocols were distributed and the delegates asked to obtain their provincial association's response. After two weeks of intense discussions and phone communication it was impossible to achieve the unanimous agreement on changes to the border regulations. Although disheartening to those who wanted access to additional U.S. queens, a positive aspect to the negotiations was that the provincial associations began openly talking about the issues of concern and working towards resolving some of the apparent problems. The CHC continued discussions through the summer with the CFIA and the provincial apiarists. The CFIA issued an announcement that they intend to allow the importation of queens from continental U.S. This importation will only be under specific import permit conditions. They requested that industry develop recommendations for a national strategy for the permit conditions. CHC accepted this challenge and has begun to develop a new initiative. We have learned several lessons from the last attempt to achieve a consensus. This time a face-to-face meeting will be held with a limited number participants representing each of the provincial beekeepers associations and provincial governments. Facilitators have been hired to ensure that the meeting is structured, focused and science based. All parties will have the same current, accurate information the facilitators will ensure that the process does not get derailed. This meeting is planned for Kelowna, BC in late October.

This time CHC will be able to deliver an industry supported science based protocol that minimises the risk to our industry. The national strategy for queen imports to Canada will allow CFIA to develop simple effective regulations that will allow our industry to grow and thrive with safe, clean queens from the U.S. -Heather Clay

BEEHIVE CONSTRUCTION - make all beehive parts with a tablesaw. Step-by-step instruction includes simple fingerjoint jig and jigs for milling multiple parts. 22 pages includes scaled and full size drawings for frame parts, hive bodies, bottomboards and covers. \$10.00 postpaid. VISA, Mastercard accepted. Garreson Publishing, 7201 Craig Rd., Bath, NY 14810, 607.566.8558. (TF)

PERIODICALS

RURAL HERITAGE - bi-monthly magazine in support of farming and logging with horses, mules, and oxen. Subscription includes **THE EVENER** Workhorse, Mule & Oxen Directory; \$26 for 6 issues; sample \$8.00. Rural Heritage, 281-B Dean Ridge Lane, Gainesboro, TN 38562. 931.268.0655, www.ruralheritage.com

THE SCOTTISH BEEKEEPER. Magazine of The Scottish Beekeepers' Assoc. Rates from Enid Brown, Milton House, Main Street, Scotlandwell, Kinross-Shire KY13 9JA, Scotland, U.K. Sample on request. \$1.

IBRA: INFORMATION AT YOUR FINGERTIPS. IBRA is the information service for beekeepers, extension workers and scientists. Our members support this service and enjoy the benefits of belonging to IBRA, which includes *Bee World*. We need your involvement join IBRA support this important information network and extend your beekeeping horizons. For more information contact: IBRA, 18 North Road, Cardiff CF1 3DY, UK. Telephone (+44) 1222 372409. Fax (+44) 1222 665522.

THE AMERICAN BEEKEEPING FEDERATION has many benefits to offer its members. Send for a membership packet of information today! Contact the American Beekeeping Federation, P.O. Box 1038, Jesup, GA 31598, ph. (912) 427-4233, fax (912) 427-8447 or email info@abfnet.org.

IRISH BEEKEEPING. Read *An Beachaire* (The Irish Beekeeper) Published monthly. Subscription \$22.00/year, post free. Mr. Graham Hall, "Weston", 38 Elton Pk., Sandycove, Co. Dublin, Eire, email: Graham Hall@dti.team400.ie.

THE AUSTRALASIAN BEEKEEPER. Published monthly by Pender Beegoods Pty. Ltd. Send request to: The Australasian Beekeeper, 34 Racecourse Road, RutherfordNSW 2320, Australia. Sub. \$US 38 per annum, Surface Mail (in advance). Payment by Bank Draft. Sample free on request.

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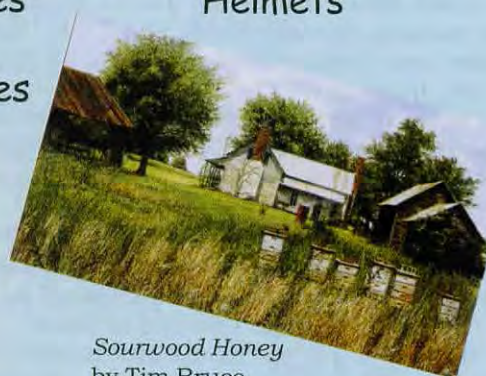


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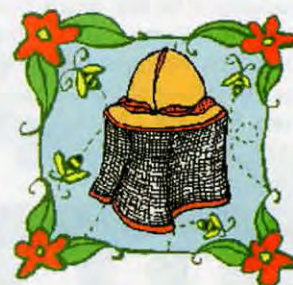
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“The widdler’s good to me, and friendly; but I can’t stand them ways she won’t let me sleep in the woodshed; I got to wear them blamed clothes that just smothers me, Tom; they don’t let any air git through ‘em I got to wear shoes all Sunday.” – Huckleberry Finn, in Mark Twain’s *The Adventures of Tom Sawyer*.

As dusk descends on my beeyard on Charles Ryden’s Main-Elk Creek ranch, I hear the distant laughter and faint shouts of boys running through woods and fields. Smiling, I set down my smoker and listen.

Oh, those boys! They embody everything the rest of us lost long ago – openness, innocence, a sense of wonder. They’re the luckiest kids on Earth, and they don’t even know it.

Cody and Mark live in the old ranch house, and they both love to talk.

When I asked 11-year-old Mark about the fishing in the creek, he allowed as how it was pretty good. I asked him what kind of trout. “Oh, browns, brookies, rainbows,” he said.

“How big?” I asked. I wanted to know.

Mark held out his hands and moved them slowly back and forth like an accordionist – or an honest angler. His hand spread indicated 12 to 18 inches – pretty decent-sized fish for a dinky little creek.

“You sure they’re that big?” I asked.

“Oh, you bet,” he said.

I had only recently put bees on the ranch, and Mark wanted to know all about the little darlings. But he said he was allergic to beestings. “Everybody in our family is,” he said. This astonished me.

I said, “Wait a minute. What do you mean you’re allergic?” People think “swelling up” is an allergic reaction, but it isn’t. It’s a normal reaction. Not everybody knows this.

He said, “I break out, and I can’t breathe. I have to take Benadryl.”

I’ll be darned. “I guess you are allergic,” I said.

Ranch owner Charles Ryden comes from one of the valley’s respected old ranching families. He’s a perfect gentleman. You could not ask for a more considerate landowner. And while he owns the ranch, he doesn’t live there. His son Justin does. Charles lives at his other place up the road. But I just didn’t get it. Why would Charles want bees on the ranch if “everybody in the family” is allergic to bee stings?

The bees were already there, so I decided not to worry.

Just then 10 frisky bulls came stomping, kicking and head-butting across the bridge. I gave a start, but Mark lounged against my pickup just as casual as any rodeo cowboy.

The bulls’ rippling muscles made me think of Arnold Schwarzenegger.

Mark knows a greenhorn when he sees one. He said, “I’d move my truck if I were you.”

“Why would you do that?” I asked.

“Because those bulls could wreck it if they ran into it. That’s what happened to my dad’s truck.”

Jesus and Sergio and a bunch of the other Mexicans chased after the bulls, whooping and laughing and shouting Mexican cattle calls, as they herded the bulls into a pen. Mark ran to join up.

When he came back, I said, “Those bulls could stomp you. Don’t they scare you?”

“Naw,” he said.

I said, “Wow, they scare me.”

That little philosopher looked at me and said, “Think of it this way. You’re scared of bulls. I’m scared of bees. Everybody’s scared of something.”

Mark doesn’t miss a trick. If he had a fence to whitewash, he’d let you help.

Mark’s 12-year-old brother Cody – a living, breathing reincarnation of Huckleberry Finn – wears shorts in the summer. No shoes, no socks, no shirt. Just shorts.

One day he said, “Your bees moved into the shed, and I got stung eight times.”

“Uh oh,” I thought. “This doesn’t sound good. They let me keep bees here, and now they’ve moved into one of the outbuildings and gotten nasty about it.”

“Let’s have a look,” I said.

Inside the shed he pointed to a large paper nest by the door.

I said, “Let’s get out of here. Those are hornets.”

“Oh,” he said.

Safely outside, I said, “What’d you do to upset them, anyway?”

He said, “I was inside the shed looking for something, and Mark came over and said, ‘Mom needs to talk to you.’ Then he slammed the door and ran back to the house. As soon as he slammed the door, those bees tore after me. I went running as fast as I could, but they got me eight times.”

In my mind’s eye I watched him sprint barefoot down the lane, legs and arms pumping, yelling at the top of his lungs, while bald-faced hornets lit into his bare brown back. Why didn’t Mark Twain tell that story?

“Those were hornets,” I corrected. “Not bees.” I hate it when honey bees get a bad rap.

Youth vanishes like a dream. Rub your eyes, and it’s gone. The magic always lies in remembrance, don’t you think?

Sadly, by late-summer Mark and Cody had to wash behind their ears and go back to school. I’m pretty sure they have to wear shoes.

The Boys

Ed Colby

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