Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

AUGUST 2003 VOLUME 131 NUMBER 8

Purple Loosestrife is becoming an endangered plant, due to the leaf and root feeding beetles introduced by USDA. But, until it's gone, it's still a sight to behold. This from a wetlands in upstate New York.

by Kim Flottum

FEATURES

800.289.7668 • www.BeeCulture.com

Publisher – John Root

Editor – Kim Flottum, Ext. 3214, kim@BeeCulture.com

Production Coordinator – Kathy Summers, Ext. 3215, kathy@BeeCulture.com

Circulation & Advertising – Dawn Feagan, Ext. 3220, dawn@BeeCulture.com

Publications Sales – Jim Thompson, Ext. 3255, jim@BeeCulture.com

Contributors

Steve Sheppard • Mark Winston • Clarence Collison
Ann Harman • James E. Tew
Malcolm T. Sanford • Wyatt Mangum

Subscription Information

U.S., one year, $21.50; two years, $41. Newsstand price: $3.50. All other countries, (U.S. Currency only), $15.00 per year additional for postage. Send remittance by money order, bank draft, express money order, or check or credit card. Bee Culture (ISSN 1071-3190), August 2003, Volume 131, Issue 8, is published monthly by The A.I. Root Co., 623 W. Liberty Street, Medina, OH 44256. Periodicals Postage Paid at Medina, OH and additional mailing offices.

Advertising

For information on placing display advertisements, contact Dawn Feagan in our Advertising Dept. 800.289.7668. Ext. 3220

POSTMASTER: Send address changes to BEE CULTURE, The A.I. Root Co.,623 W. Liberty St., Medina, OH 44256

DEPARTMENTS & COLUMNS

KEEP IN TOUCH

Write: Editor, 623 W. Liberty St., Medina, OH 44256
FAX: 330-725-5624
EMAIL: KIM@BEECULTURE.COM

MAILBOX

New Beekeepers

Tonight at the Wasatch Beekeepers Association we had a new member join, he said that Kim Flottum referred him to come to our meeting. The speaker happened to be me and he is so excited to become a beekeeper. He paid his dues, and has a real excitement for becoming a hobbyist beekeeper.

He came over to my home, and we opened up the hives and now he is even more excited. I told him that in two weeks, I would give him a nuc to get started. It was so much fun to see the enthusiasm he has. He said it was the first time he has ever looked into a hive. I pulled out a frame of bees and the white drawn comb was just beautiful. Beekeeping is a thrilling experience. This is the second time in two months someone has wanted to get into beekeeping. Last month, a man from Orem called my wife and wanted to know about honey bees. I called him back and he came over the next day. We opened up the hives, he was pulling the frames, and looking at the bees with out any protection. I was amazed, the bees were very gentle with him. He seemed to be a natural beekeeper. He helped me put together some frames, and then I sent him home with a small beehive.

What has been so fun for me is to see the excitement that these men have. It has been fun for me to teach them and to be their mentor. I think it has given me a new excitement for the honey bees as well.

Anyway, thanks for referring them to the Wasatch Beekeepers Association and the Utah Beekeepers Association.

Larry Knowlden
Secretary, UT Beekeepers Assn.

Drone Comets

I have enjoyed immensely your articles on drones, particularly since I found nothing in them that counters anything I have observed since the 1940s. While caging thousands of queens in my uncle's (Clarence) operation in the 1950s, I could see the comets and hear the popping of mating queens.

In the 1960s and 1970s I took my entomology classes to a particular spot to show them drone congregation areas. With a slingshot I lobbed rocks up into their midst so the students could see the drone comets.

With quite some amusement I read at that time arguments that such congregations did not exist!

Adrian Wenner
Santa Barbara, CA

Political Mite!

Our recent experience with the Tennessee General Assembly supports the comments of James Doan (*Bee Culture*, May 2003). A new law was passed and signed by Governor Bredesen that allows a beekeeper to sell 150 gallons of honey each year without the expense of an approved manufacturing facility. This important legislation comes at a time when the ranks of beekeepers have been steadily diminishing in Tennessee and nationwide while it has become more difficult to attract individuals to pursue the beekeeping craft. Now that beekeepers, and in particular, hobbyists, can recoup some of their expenditures for costly pest and disease medications as well as other outlays, beekeeping will perhaps become more appealing. This legislation would not have happened if it were not for a few individuals who took up the cause and the lobbying efforts by many hobbyist beekeepers across the state. Once the legislators understood the issues, they welcomed nearly unanimously the proposed legislation. This happened despite resistance by some beekeepers and a pivotal agency within the Tennessee government. Mr. Doan is correct in his assessment that beekeepers need to be aware of

MAILBOX

and most importantly, use their political influence.

David Young & Jim Primus
TN Hobbyist Beekeepers Assn.

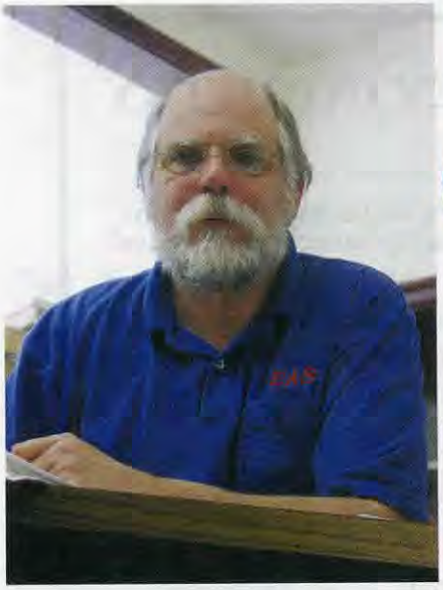
Top Job

Some day, we all believe, we will get to the top of things. Last week, I did, get on top.

The rest of the story The homeowner had put a flat board atop the chimney for the Summer, to keep the rain out. But, there was a crack in that board, just a bee-space wide, and a passing swarm decided to make use of that opportunity. At night the rooms below would be deluged with bees, (being attracted by the

light filtering up the unclosed flue) but in the morning, there would be no bees outside the house, (at ground level) to give a hint to the source for the deluge.

Art Halstead
Chesapeake, VA



Opportunity Is Knocking

Can you hear it? Listen. Opportunity is knocking. Loud. Hard. But not forever. Maybe not for long. It's time to act.

Permit me to explain.

Not too long ago everybody that was anybody, and was associated with something digital.dot.com was on top of the world. The craziest, off-the-wall ideas got venture capitol money in six and seven figures. There was way more money than common sense. Way, way more. And though a very few made those investments profitable, after awhile, most didn't. Most, in fact, crashed and burned, or just disappeared.

The fall out has been ugly. Other events have contributed to the darkness that followed, certainly, and those unpredictable and tangential factors must be considered in the equation. But since the dot.com bubble burst, the economy has been in the toilet.

Unemployment is way up, reducing tax revenue for governments at all levels, and lowered spending by most people for most things. Deflation – essentially no matter how cheap you sell it for, there's not enough money to buy it – is making predictive headlines in leading business journals. Not good.

The cost of the war and now the peace, and the insane fiscal policy of the federal government have only sealed the shutters and drawn the drapes on the economic blackness at the moment.

So how can opportunity be knocking? Well, go back to that bubble, just before it burst. Money, lots of money, everywhere. Remember? Now, look around you. Look at the honey price report on page 10. Look at what (at least some) beekeepers are being paid for honey. Amazing, isn't it? Right now, most people in this industry are sitting on top of that bubble. Money's in the air, everywhere.

The question is, is there the same amount of common sense floating around? Are we, too, destined to be tossed on the burn pile, along with Pets.Com and the rest of the trash? I hope not.

As an industry, will we be smart enough to invest enough money in solid, practical beekeeping research, for long enough to do the job? That means not just commercial beekeepers, but the supply businesses they are throwing money at to make up for lost years; the queen and package companies who can't keep up with demand (for a whole variety of reasons); the pollinators and migratory people who are benefiting from high prices for both of their products; and certainly the hobby group, who, when it works, reap the rewards of all of these successes.

But commercial and sideline operations need to look close to home, too. There's no doubt times have been tough for a lot of these operations. There's not many of them around because of those obstacles in the road. So, for those that survived, what's the best way to spend this new found wealth? The first question, obviously, is should you spend it at all? Putting it in a sock and burying it out back may not be the worst move you can make at the moment.

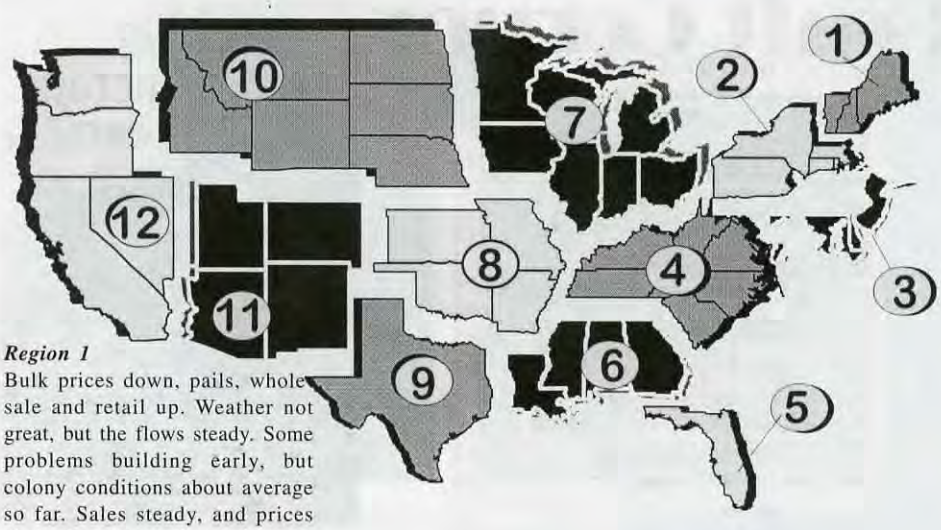
But if you choose to expand, to take advantage of this opportunity consider the following – finding additional labor, more equipment, increased liability, more complicated accounting, and most of all, your costs will change. Will you be undercapitalized? How low can the price of honey go back to, if it does go back down, and have it still pay the bills (and if you expand, more bills) and still make a profit? How low? Do you know?

Or, do you consolidate a bit. Invest in efficiency, big time, down size the operation – maybe fewer hives, or drop the pollination run in the spring. If you can produce as much honey, and make the same money by scaling down and actually finish every yard, every task, by the end of the day and the end of the season – AND save time, money, energy and work – is that an option? Remember your costs will change, but for better? Or worse?

Like some, maybe a tune up, a coat of paint and paving the parking lot will add enough glamour to the place to

Continued on Page 54

AUGUST – REGIONAL HONEY PRICE REPORT



Region 1
Bulk prices down, pails, wholesale and retail up. Weather not great, but the flows steady. Some problems building early, but colony conditions about average so far. Sales steady, and prices about the same as 6 months ago.

Region 2
Bulk steady, pails down, wholesale prices up, but retail down since last month. Weather terrible early, but flow marginally OK. Colonies average to slow, sales steady to slow, but prices up since January.

Region 3
Bulk and retail prices down since last month, pails and wholesale up, however, Weather terrible as was the early flow, but colony conditions about average, all things considered. Sales mixed, and prices steady to up a bit since January.

Region 4
Prices rock steady since last month across the board. Weather's been tough, but the flows been pretty steady, and colonies mostly average to good. Sales steady to up, like prices, since January.

Region 5
Bulk and pail prices down since last month, but retail and wholesale up. Weather mixed, flows slow and colonies have been too. Sales steady, but prices up since January.

Region 6
Pail and bulk prices steady since last month, but wholesale up, and retail down. Weather's been average to less so, reducing early flows, but bees in pretty good shape. Sales steady, but prices up since January.

Region 7
Bulk prices steady, but pails, wholesale and retail prices up since last month. Weather OK, but not great, which has played havoc with flows, and bees are all over the place. Reporter say sales and prices steady the first half of the year.

Region 8
Bulk, pail and wholesale prices steady since last month, but retail prices up. Both the weather and honey flows have been erratic, but colonies in pretty good shape, generally. Sales have improved since January, and prices steady to up since then.

Region 9
Bulk prices down a bit, but pails, wholesale and retail all up since last month. Weather has been pretty good, as have honey flows so far, and colonies in good shape. Sales, and prices steady to increasing.

Region 10
Bulk and pail prices steady, wholesale down, but retail up since last month. Weather mixed, but flows steady and colony conditions excellent. Sales strong and prices steady to increasing since January.

Region 11
Bulk and pail prices steady since last month, but wholesale and retail have increased. Weather's been pretty good and honey flows excellent, which means good colony conditions. Sales and prices steady since January.

Region 12
Weather mixed but honey flows strong, mostly, and colonies in good shape. Reporter say sales steady. Prices steady across the board the first half of the year.

	Reporting Regions												Summary		History	
	1	2	3	4	5	6	7	8	9	10	11	12			Last	Last
Extracted honey sold bulk to Packers or Processors													**Range**	**Avg.**	**Month**	**Yr.**
Wholesale Bulk																
55 gal. Light	1.25	1.50	1.35	1.25	1.20	1.48	1.50	1.22	1.29	1.50	1.31	1.20	1.20-1.50	1.34	1.40	0.87
55 gal. Amber	1.00	1.25	1.20	1.05	1.10	1.39	1.40	1.12	1.18	1.22	1.35	1.00	1.00-1.40	1.19	1.25	0.78
60# Light (retail)	93.50	96.29	97.20	84.00	97.20	105.00	102.86	90.73	110.00	87.50	110.00	97.20	84.00-110.00	97.62	91.01	78.50
60# Amber (retail)	85.40	89.79	90.46	81.85	90.46	95.50	99.00	85.00	103.75	80.00	100.00	90.00	80.00-103.75	90.93	85.57	71.67
Wholesale Case Lots																
1/2# 24's	38.00	33.03	50.83	35.81	50.83	25.00	46.15	50.83	50.83	35.76	24.00	48.00	24.00-50.83	40.76	32.24	33.72
1# 24's	55.03	51.01	55.20	50.20	48.56	56.00	53.50	52.80	61.20	59.36	69.90	68.00	48.56-69.90	56.73	51.79	47.84
2# 12's	51.47	43.69	54.00	46.65	54.45	43.00	52.84	54.45	55.50	55.77	45.00	57.00	43.00-57.00	51.15	47.41	42.39
12 oz. Plas. 24's	49.45	42.54	50.40	48.98	55.31	47.00	44.98	41.68	54.00	51.63	57.90	47.40	41.68-57.90	49.27	43.70	40.64
5# 6's	53.67	51.12	74.04	50.88	74.04	60.00	63.54	47.50	66.00	67.89	50.00	66.00	47.50-74.04	60.39	51.73	48.30
Quarts 12's (**NEW**)	55.40	90.06	78.00	68.34	76.60	74.00	74.55	69.40	63.00	82.50	53.70	84.00	53.70-90.06	72.46	64.60	
Pints 12's (**NEW**)	33.20	45.68	46.94	41.93	46.94	50.00	48.12	39.04	37.33	46.94	48.00	48.00	33.20-50.00	44.34	42.39	
Retail Honey Prices																
1/2#	2.32	2.11	2.56	2.42	2.56	2.50	2.03	2.41	2.56	1.99	3.18	2.79	1.99-3.18	2.45	2.39	2.16
12 oz. Plastic	3.05	2.75	2.95	2.82	3.25	3.25	2.90	3.25	3.38	3.36	3.00	2.80	2.75-3.38	3.06	2.98	2.50
1 lb. Glass	3.53	3.46	3.50	3.46	3.88	3.63	3.26	4.34	4.00	3.86	4.19	3.83	3.26-4.34	3.74	3.60	3.05
2 lb. Glass	6.44	5.32	5.50	5.63	6.14	7.76	5.47	6.30	6.63	6.85	5.50	6.30	5.32-7.76	6.15	5.77	4.84
Pint (**NEW**)	4.19	5.25	4.99	4.78	5.70	4.67	6.55	5.34	5.00	7.20	5.09	5.50	4.19-7.20	5.35	5.43	
Quart (**NEW**)	8.13	7.97	9.50	7.33	10.62	7.67	8.45	8.48	8.38	12.39	6.83	9.60	6.83-12.39	8.78	9.01	
5 lb. Glass	13.44	11.65	16.56	11.11	16.56	11.75	13.72	15.63	16.00	14.95	12.31	16.56	11.11-16.56	14.19	12.48	10.96
1# Cream	4.33	4.33	4.70	3.97	4.70	3.43	3.95	5.12	4.70	4.61	4.85	4.17	3.43-5.12	4.41	4.24	3.80
1# Comb	4.75	4.12	3.95	4.65	5.09	4.17	4.29	4.69	5.09	5.50	7.23	6.50	3.95-7.23	5.00	4.67	4.61
Ross Round	3.31	3.53	3.60	4.85	3.80	3.79	4.42	3.80	3.50	6.00	5.18	3.80	3.31-6.00	4.13	4.21	4.05
Wax (Light)	3.56	4.15	3.00	1.40	1.20	2.37	2.76	2.50	4.00	4.10	2.65	4.10	1.20-4.15	2.98	1.90	1.96
Wax (Dark)	2.50	3.61	2.75	1.25	1.10	2.17	2.14	3.00	3.67	3.00	1.95	3.00	1.10-3.67	2.51	1.68	1.40
Poll. Fee/Col.	41.00	41.17	40.00	38.40	30.00	42.50	41.38	39.00	32.00	35.39	33.50	36.67	30.00-42.50	37.58	36.79	38.47

RESEARCH REVIEWED

Explaining • Defining • Using

Steve Sheppard

". . cannibalism of young and middle aged larvae . conserves resources for the already existing old larvae."

Understanding what goes on inside a beehive holds a certain fascination for beekeepers. Beyond an interest to manipulate boxes full of insects to gather honey, most beekeepers I've met are truly curious about the biology of the tiny creatures that are the objects of their affliction. One of the more elegant aspects of this biology is the ability of the colony to adjust internal processes (and the behavior of individuals) to respond to the changing conditions of the world outside the hive. A recent paper describes the effect that changes in colony-level food intake have on the degree of larval care by nurses and provides us with an elegant example of the adaptive nature of colonial life (Schmickl et al, 2003).

T. Schmickl and colleagues at the University of Graz, Austria, introduce their study by pointing out that fast-growing honey bee larvae have a crucial need for a stable food supply and brood nest conditions. To a great extent, workers are able to control brood nest conditions within the hive. However, the level of incoming food to the colony cannot be controlled to such an extent, due to the fluctuating availability of nectar and pollen and vagaries of weather. How does the colony respond? To address this question, the researchers devised a system to adjust the food intake of an experimental observation colony through the use of artificial "rain." During periods that were designated as "non-foraging," a shower box with cooled water was placed in front of the entrance to the colony and the bees did not attempt to fly. With the exception of a daily early evening "rain break" (7:30pm to 2 am) to permit defecation flights, the "rain" was continuous during the non-foraging period. During the periods designated as "foraging," the water was turned off and the bees were allowed to forage normally (a nearby feeder provided sucrose). The researchers conducted observations throughout three foraging/non-foraging cycles. Each cycle consisted of a five-day non-foraging period followed by a six-day foraging period.

To measure differences related to the change between foraging and non-foraging status, the researchers measured the area of comb occupied by eggs, larvae, pupae, pollen and honey on a daily basis. In addition, they made detailed observations of the interaction between nurse bees and old and young larvae. "Young" larvae were defined as those that were approximately two days old and "old" larvae were around five days old. Observation of nurse bee interactions with larvae from these two age groups, made before the start of the experiment, served to provide "control" data for the comparison. In total, 12 young larvae and 12 old larvae were observed during each combined day of the experiment. The authors measured the rate of brood cell inspection and also defined "nursing" acts to be head-in inspections lasting more than three seconds and less than three minutes. The queen was also observed carefully (four hours daily) and her behavior, her interactions with attendants and the number of eggs she laid was recorded.

The amount of both pollen and honey stored in the combs declined during the non-foraging period. Because honey stores were large (over 13,000 cells), the decrease was relatively small (less than 10%). However, during the non-foraging periods pollen declined drastically, from a maximum of over 2000 cells to a minimum of 32 cells. Overall, the queen remained relatively constant in her egg-laying rate during both the foraging and non-foraging periods (about 34 eggs/hour) and the amount of time she was fed by workers remained constant (about 8% of the observation time). During the non-foraging periods, the queen did spend more of her time being "idle" and was typically surrounded by more attendants. The brood area of older larvae declined during the non-foraging period, but increased during the foraging period, while the amount of young larvae continued to increase slightly throughout the experiment. However, the biggest changes between the non-foraging and foraging periods were seen in the interactions between nurse bees and larvae.

The non-foraging treatment led to a daily decline in the time that nurse bees spent inspecting larval cells, especially those of young larvae. The decline continued for several days, even after good foraging resumed. The artificial rain treatment lowered the inspection rate of nurses to both old and young larvae. However, in the foraging period that followed, the inspection rate for older larvae was restored, while a lowered inspection rate persisted for the younger larvae. Overall, the time spent nursing older larvae was higher than that expended on young

Continued on Next Page

RESEARCH ... Cont. From Pg. 13

larvae. During the first three days of the non-foraging period, nursing also declined for the older larvae. However, it then increased such that the nursing of older larvae on day five of the non-foraging period was equal to the level of nursing at the beginning of the period. The level of nursing of the younger larvae was dependent on the amount of pollen stores to a much greater extent than in older larvae.

In the Discussion, the authors ask the question: "How can the colony reduce the amount of larvae so quickly . (during the non-foraging period)?" They point out that the rate of feeding of the queen and her egg-laying rate is stable and conclude that the reduction is due to cannibalism. The decline in the number of old larvae is thus a "delayed result of cannibalism of young and middle aged larvae; this conserves resources for the already existing old larvae."

So why is it that during periods of low resource availability, the workers regulate the demand for resources by decreasing the number of old larvae rather than by feeding the queen less to adjust her egg-laying rate? The authors caution that their study is based on a single queen and should be repeated prior to reaching generalized conclusions. Nonetheless, they suggest that it may take some days for a queen to resume normal egg laying after stopping, while the rate of cannibalism can be adjusted more quickly. As a result of this strategy, the older larvae (who have already received considerable "investment" from the colony) receive continued high levels of nursing, while the young larvae provide a ready protein source for hungry nurse bees and a means to adjust the eventual number of older larvae.

The fact that honey bees have such a rapid means of brood "adjustment" may explain the utility of the beekeeping practice whereby pollen or pollen substitute is fed to colonies in early Spring. If the goal of the beekeeper is to maximize the bee population (perhaps to take advantage of an early season honey flow), then supplemental feeding of protein may dampen the tendency of the colony to cannibalize young brood and consequently slow overall population growth during typical bouts of "bad" weather in the Spring. To test this hypothesis, it should be possible to repeat the experiments of Schmickl and colleague using colonies with and without pollen supplementation. BC

Reference

Schmickl, T., B. Blaschon, B. Gurmann and K. Crailsheim. 2003. *Collective and individual nursing investment in the queen and in young and old honeybee larvae during foraging and non-foraging periods.* Insectes Sociaux 50: 174-184.

Dr. W. Steve Sheppard, Thurber Chair, Department of Entomology, Washington State University, Pullman WA 99164-6382, shepp@mail.wsu.edu; http://apis.wsu.edu

Mark Winston

Winning The Gold

"This fine organization, EAS, has been presenting the Hambleton Award to researchers since 1973, a similar Student Award since 1979, and the new Roger A. Morse Teaching/Extension/Regulatory Award since 2000."

Once again Dr. Winston embarrassed himself in public by failing to maintain the proper demeanor at a fancy banquet. No, I did not belch loudly, tell an off-color joke, or consume too much wine. It was the usual problem; a good friend of mine was receiving an award, and I started crying.

Fortunately I managed to hide it behind a pretend stuffy-nose and a surreptitious grab for my handkerchief, but I should have seen it coming. After all, anyone who cried at the end of all three Mighty Ducks hockey movies, and left the theatre so as not to embarrass his daughter at the sappy ending of *Mr. Holland's Opus*, should have been better-prepared.

Nothing excites my overly active sentimental genes more than seeing someone honored by their friends and peers, but it's not just me. In between my crying jags I've noticed the same maudlin sentiments gushing from others when awards are presented and honors bestowed.

My always-handy dictionary defines an award *as something granted for merit*, and merit as *superior worth or excellence*. Our beekeeping community has numerous awards that recognize distinction, presented to beekeepers, researchers, and extension personnel who have excelled at their jobs and provided exceptional service to our industry.

In my tear-stained opinion, the most distinguished and thoughtful awards in apiculture come from the Eastern Apiculture Society. This fine organization has been presenting the Hambleton Award to researchers since 1973, a similar Student Award since 1979, and the new Roger A. Morse Teaching/Extension/Regulatory Award since 2000. Looking back at the recipients provides a fascinating glimpse into the last thirty years of beekeeping, and also the opportunity to reflect on the deeper underlying meaning beneath these and other honors.

The first Hambleton Award was presented to a German immigrant to Canada, Rolf Boch, who worked for Agriculture Canada. The most recent award is going this month to Marla Spivak from the University of Minnesota. A number of interesting trends and patterns emerge as we trace the other 26 winners in between these two deserving recipients.

For one thing, the Hambletons are pretty evenly divided between government (U.S. Department of Agriculture and Agriculture Canada) and university scientists. For another, only six of the 28 recipients have been women, the first being Martha Gilliam in 1987 However, five of the last 14 award winners have been female, illuminating the diversification of professional life in North America over the last few decades.

Scrutiny of the recipients also reveals research "dynasties." A strong performance has come from my own alma mater the University of Kansas, including our supervisor Orley " Chip" Taylor and three of his students who were members of the "killer bee" team: Gard Otis, Marla Spivak, and myself. Chip's academic "grandchildren" also have been rewarded with the student award, including my own students Michael Smirle, Ken Naumann, and Tanya Pankiw.

The late Roger Morse's group from Cornell produced another dynasty, including Hambleton recipients Roger himself and Norm Gary, John Harbo, Gene Robinson, and Tom Seeley, all who worked closely with Morse at some point in their university educations. Also represented in his legacy are two students who studied under Gene Robinson (David Schultz and Tugrul Giray) and the first three winners of the Morse Teaching/Extension/Regulatory Award (Michael Burgett, Dewey Caron, and Caron's student Jim Tew).

Other universities well-represented throughout all three awards include Ohio State, Michigan State, Louisiana State, and the University of California at Davis.

Another trend is less evident from the list of winners but important in understanding how apiculture has changed over the last many decades. In my student days, a group of us considered ourselves rebels because we were incorporating perspectives from the new field of behavioral ecology into apiculture, a discipline where management questions and basic science

Continued on Next Page

"Our contention was that studying bees in their evolutionary and ecological context would reveal aspects of bee biology important for management, a somewhat radical perspective then, which has become mainstream thinking today."

had been somewhat separated.

Our contention was that studying bees in their evolutionary and ecological context would reveal aspects of bee biology important for management, a somewhat radical perspective then which has become mainstream thinking today. This new "movement" in bee research yielded six Hambleton winners from 1988 until today (Rob Page, Gene Robinson, Tom Seeley, Gard Otis, Marla Spivak, and myself), as well as a cascade of research articles, books, and contributions to bee management from this Gang of Six and our students.

Receiving awards is a high honor and a great thrill, but it also can reveal profound insights about how to conduct ourselves inside and beyond our professions. One such lesson was brought home to me early on, when I had the good fortune and exhilarating experience of being the Eastern Apicultural Society's first Student Award recipient in 1979.

I had recently returned from a long stint studying killer bees in South America, and because of my extended absence I had not had much opportunity to observe apicultural culture in North America. I had attended few meetings, knew few beekeepers, and had met almost none of the scientists and others involved professionally in apiculture. "Clueless" would be an apt description of my state of mind when I traveled to Ottawa that summer to attend the EAS meeting and receive my first significant award.

Two former Hambleton Award winners attended as well, Cam Jay and "Shim" Shimanuki, Cam from the University of Manitoba and Shim from the U.S. Department of Agriculture laboratory in Beltsville, Maryland. These two fine gentleman must have sensed my lack of experience and poor socialization, because they adopted me for the meeting and took me around introducing me to everyone I should know.

I was aware enough to recognize that I was in over my head, and paid a lot of attention to how Shim and Cam comported themselves. I observed the respect with which they treated everyone they talked with, from beekeeper to beekeeper's spouses to students to esteemed professors and research scientists. I noted the attention they gave to every question they were asked, and the care with which they provided answers to the best of their ability.

I listened as they admitted when they didn't know an answer, and watched them learn and probe from the discussion around them. I absorbed their skills as they subtly steered me towards people I should know, and grew to appreciate the web of relationships and friendships that their careers had woven.

That meeting was a formative experience for me, and so it was unusually emotive to receive the Hambleton Award 13 years later, with Cam and Shim in attendance, still working their professional magic. I was reminded then, as I am reminded by every award ceremony I observe, about what excellence and merit are really all about. Yes, achievement and accomplishment are a part of it, but the fabric of relationships we weave and the impact we have on others is really what awards most deeply recognize.

I know the senior 2003 awardees well, Tom Sanford and Marla Spivak, who are receiving the Roger A. Morse and the Hambleton Awards respectively. They are excellent choices for the same reasons that Cam and Shim and the other award winners were such appropriate recipients. Both have considerable accomplishments to their credit, but more significantly have created a web of relationships, friends, and colleagues that inspired their nominators to propose them.

Tom is best-known for his communications skills, first as a premier extension biologist whose newsletter was must-reading for anyone in apiculture. More recently, he has embraced electronic means of distributing information, and has become a leader in apiculture and beyond in fully utilizing this novel means of keeping in touch.

Marla is also a premier communicator, and one of the best lecturers out there on the bee circuit today. And she has a lot to communicate; her research on hygienic bees and disease/parasite resistance has had real impact on management as well as illuminating important new information about basic bee biology.

I also have had the pleasure of meeting the Student Award winner Heather Matilla from the University of Guelph, and she is quite an impressive young woman. She already has published more papers in better journals than many faculty members, and she has a clear, deep, and genuine enthusiasm for research that makes her delightful to talk with. Don't be surprised if EAS invites her back in fifteen or twenty years for the Hambleton.

The myriad qualities of these three deserving award winners are extensive and obvious, but only because someone took the time to put together bulging nomination packages to assist the Eastern Apicultural Society in making its award decisions. Nominating is an art form in itself, requiring a great amount of careful work to showcase the talent and accomplishments of someone else. I understand there were a large number of nominations in all categories this year, and we all owe a great debt of gratitude to those who took it upon themselves to showcase the achievements of others.

Congratulations to this year's Hambleton, Morse, and Student Award winners, who represent the cream of current and future talent in apiculture. And, a sincere thank you to all the nominees and nominators, whose dedication and perseverance have made our industry such a delight to work in. BC

Top Bar Hives

Malcolm T Sanford

"A kinder, gentler approach to keeping bees."

I have previously written about what I called a "kinder, gentler beekeeping," perhaps perfectly suited for the urban setting. I concluded it may be just the ticket for those neophyte beekeepers I am now seeing at meetings who don't want take up beekeeping as an avocation, but would like a colony or two for educational purposes or pollinating their home garden.[1]

The kind of beekeeping I'm talking about employs the top-bar hive, an offshoot of the Kenya Top-Bar Hive (KTBH) used in Africa. A history of this technology was provided by Conrad Berube in "The Kenya Top-Bar Hive as a Better Hive in Developing Countries," *American Bee Journal*, August 1989. The top-bar hive is at once more ancient, and one-hundred-years more modern, than Langstroth's, according to Mr. Berube:

"...developed along principles of certain Greek basket hives which may date back to the time of Aristotle. Its modern avatar was 'invented' by J.D. Tredwell and P. Paterson in 1965 and was employed in a rural extension project directed by the University of Guelph in the 1970's. The hive is quite simple in concept. Combs are supported by bars of wood which lay across the narrow width of the trough-like hive-body. The width of each top-bar is equivalent to the natural width of a comb plus a bee-space (35 mm or 1 3/8 inches). Thus, as in the Langstroth hive, the combs are maintained at their natural spacing from one another. Unlike the Langstroth hive, however, the combs in a KTBH are supported only at the top and are not enclosed by a full frame. Honey-comb in natural nests is roughly in the shape of a "U," wider at the top than at the bottom. This shape is stable even when supported only along the top edge. The design of the KTBH (an inverted trapezoid when seen in cross-section) allows the bees to maintain the natural shape of their comb. Since this shape is stable the bees will leave a bee-space along all edges of the comb rather than connecting it to the walls of the hive. The combs can then easily be removed for manipulation or harvesting. The top-bars have the same, standard length of 480 mm. (19 in.) so that combs may be transferred into Langstroth equipment, for instance to strengthen a broodnest, for those beekeepers who maintain both types of hives."[2]

Because the top bars can be made the same length as in the Langstroth hive, the top-bar hive can also be fitted with standard supers, taking advantage of the best of both hive technologies. Indeed, another way to describe the top-bar hive is one based on a frameless, moveable comb. Most questions about the top-bar hive concern the number of bars in a colony and the slope of the sides (at least one practitioner says there is minimal attachment even if there is no slope). The actual figures depend on the race of honey bee in use or characteristics desired by the beekeeper. For example, the number of bars can range from 11 to 35 (400 to 1143 mm total hive length); the hive width from 356 mm to 480 mm and depth from 229 mm to 490 mm. The side slope ranges from zero to twenty-three degrees and the top-bar spacing (center to center) can be as little as 30 mm for *Apis cerana* or as much as 38 mm. for *Apis mellifera* (European). African bees average 32 mm.[3]

Possible disadvantages of the top-bar hive result from its very flexibility. Too small a hive, for example, can result in unproductive populations that may also swarm excessively. A small frame also means more handling during harvesting honey. Both of these can be modified at the beekeeper's will, however, and tailored to suit individual needs. As one fan said, "the bees are very adaptable. I think the type of hive is a reflection of the beekeeper's priorities." Another way to put this I've heard is that with reference to equipment, "the bees really don't care."

A modern pioneer in top-bar beekeeping is Dr. Wyatt Mangum, who has spoken and written about it extensively. He considers the hive well designed for what he wants to do in beekeeping. Almost all of his equipment is now in this format. The hive is inexpensive and can be made out of scrap lumber, perfect for a struggling young academician. It is also a flexible system. Dr. Mangum describes reducing larger hives to decrease their weight by simply using a buck saw to cut several bars off the end; the cut end becomes a queen-rearing nucleus. This is perhaps the ultimate in hive flexibil-

1Sanford, M.T. 2000. "Beekeeping in the Digital Age," Bee Culture, accessed June 18, 2003 www.beeculture.com/beeculture/digital/2000/column18.

2Conrad Berube's World Wide Web site, accessed June 17, 2003 nanaimo.ark.com/~cberube/ktbh.

3Practice and World Resources (London: Heinemann Newnes)

Continued on Next Page

TOP BAR HIVES ... Cont. From Page 17

ity. Imagine taking a standard Langstroth 10-frame hive and converting it to an eight-frame model with a nucleus left over in the bargain. Although Dr. Mangum does a lot of queen rearing, for which he says this hive is uniquely suited, he also loads these hives in the back of his pickup truck and takes them on the road to pollination contracts. He contends that in spite of his fears to the contrary, they typically suffer little damage during transport.

Top-bar beekeeping is easier on both bees and beekeeper, according to Dr. Mangum. The brood is generally placed toward the front-entrance end of the hive and the honey is located in the rear. Thus, examining the brood or taking off honey is less stressful on the insects, because one doesn't have to dismantle the whole colony. The top bars butt against each other. Because of this they double as a cover, reducing material requirements and conserving weight. An outer cover of tin or cardboard is necessary, however, to protect the colony from moisture. Only the part of the hive being worked is exposed during manipulation, which reduces overall defensiveness. Finally, all his hives are mounted on stands at waist level, keeping Dr. Mangum from having to continually bend over.[4]

There are many other beekeepers that find top-bar beekeeping satisfying. One is Mr. James D. Satterfield, who has a World Wide Web site devoted exclusively to collecting and distributing information about this kind of beekeeping. According to Mr. Satterfield, this kind of hive offers many beekeepers an inexpensive but satisfying way of keeping bees that produces less (but better) honey and more beeswax.[5] Mr. Satterfield gives full credit to his South African mentor, Paul Manguson, and others at the Honeybee Research Unit of the Agriculture Research Council, Plant Protection Res. Inst. of Pretoria, South Africa for their inspiration.[6] Mr. Satterfield also hosts a discussion of Peter Gibb's efforts in South Africa surrounding top-bar hives. It includes photos of both *Apis mellifera scutellata* and *Apis mellifera capensis* in that country.[7]

Even in its homeland, there continues to be paradigm shifts in equipment toward top-bar beekeeping away from Langstroth technology. Rupert's Honey in Africa (Zambia) says:

"We have kept bees for decades in conventional American Langstroth beehives. Two events changed our course. The first was to try an African top bar hive. Being cynics we made the first one as cheaply as possible out of a cardboard banana box. The results were stunning. Our African bee that is normally so quick to turn defense into attack became far more manageable, and produced more honey. The rains came, and the cardboard went soggy. We then forsook our organic ways and researched modern materials for two years.

"We adopted corrugated plastic for the hive body, and kept the dimensions of the standard Langstroth frame, designing our own stronger, cheaper wooden moveable frame, to enable us to manouver the brood area. This frame has however a 32mm. wide top, as this is the correct width for African bees, as opposed to the 35mm in the European races. We designed the first suspended hive after the traditional African round log hive, which has been successful in the African woodlands for thousands of years. 'Semper aliquod novis ex Africa' Through serendipity there were two dramatic spinoffs.

"Vandalism dropped to zero as the traditional method of stealing is to kick a Langstroth hive or two over of an evening, and wait for the bees to return to the now exposed cluster and suffer from cold. It is difficult to attack a hive two meters off the ground, but a pleasure to service it at waist level, or from the back of the farm truck. The health of our colonies, and their honey production were markedly better than the Langstroths in the same beeyards."[8]

Mike Allsopp of South Africa's Plant Protection Research Institute, however, has some reservations about recommending top-bar hives (TBH's): "There is a lot of misinformation on the importance of certain features of TBH's, such as the slanting sides and the reduction in defensive behaviour. In effect, TBH's are just low technology, horizontal Langstroths. In East Africa these days they have given up the slanting sides as they make no difference.

"No-one has yet to adequately test and compare the performance (in monetary return) of TBH's and Langstroths. I have a guy in Cape Town doing just this at present. At first glance the TBH's are very impressive, but over a couple of seasons their total honey yield is far below that of standard Langstroths.

"TBH's should only be used if suitable hive material is available. How can we countenance the destruction of hard wood trees to produce TBH's or log hives, as is the practice in much of Africa?

"And the major reason: All of us bee people in South Africa are involved to a lesser or greater extent in *beekeeping development programs* – advancing beekeeping in the rural and disadvantaged communities. In this respect I believe advancing the use of TBH's is the wrong approach. The aim of the programs I am involved with is the rapid development of semi-commercial beekeepers that can compete with the established beekeepers, not the provision of one or two hives to each member of the program. I suggest that using TBH's for these people retards their chances of ever becoming successful commercial beekeepers, rather than advances it. You can't easily follow honey flows or do commercial pollination with TBH's."[9]

There seems to be a top-bar hive for every occa-

4Sanford, M.T. *Apis Newsletter* World Wide Web site, accessed June 18, 2003 apis.ifas.ufl.edu/apis96/apnov96.htm#1.

5James D. Satterfield's World Wide Web site on top-bar beekeeping, accessed June 17, 2003 www.gsu.edu/~biojdsx/main.

6James D. Satterfield's World Wide Web page homage to Paul Magnuson, accessed June 17, 2003 www.gsu.edu/~biojdsx/paul.htm.

7James D. Satterfield's World Wide Web page, accessed June 18, 2003. www.gsu.edu/~biojdsx/PGIBB5.htm.

8. Rupert's Honey in Zambia World Wide Web site, accessed June 18, 2003 www.rupertshoney.co.za/rh/index.

9. Apis UK Electronic Newsletter, accessed June 18, 2003 www.apis.demon.co.uk/beekeeping/newsletters/December-97.html#TBH.

sion and environment. The idea seems to call to the "tinker" found in many beekeepers. Perhaps most elaborate is the CalKenyan hive, which has undergone several transformations and is designed strictly for California beekeeping.[10] A detailed description of building a top-bar hive from plywood is given on one Web site.[11]

Barry Birkey at his innovate World Wide Web beesource.com site shows several top-bar hive designs, including one from Texas.[12] He also describes his efforts with respect to what he calls a "hybrid." The idea for this hive came about from talks with Dennis Murrell in Wyoming, he says. Things he has heard over and over from other TBH users are that bees can and will attach the comb to the sides of the hive interior when only top bars are used. Various methods have been shared on how people break this attachment to allow for the removal of the comb and top bar. The other comment is how fragile the comb is and how easy it can break off the top bar.

Mr. Birkey believes a "bottom bar" is the surest way to prevent the bees from attaching comb to the hive interior Wanting to keep the comb as close as possible to the natural shape bees build it when hanging freely, he decided to use a very thin wood strip that is bent in an arch and attached to the top bar ends, giving the resulting "frame" the same shape as a natural comb. He gives added support by attaching wires from the top bar center to the "bottom bar" at three different locations.

Finally, he is trying several ways to get the bees to draw comb from the top bars. Starter strips are used on some frames and also full sheets of foundation with no cell imprint. "The goal will be to see what cell sizes the bees build on their own and where they place the various sizes."[13]

A key issue in using the top-bar hive is to provide the bees with a good foundation to build strong comb. This can be anything from a simple waxed string to a strip of regular foundation melted onto the middle of the top bar. Mr. Satterfield suggests immersing brown paper bags in wax and cutting them into strips to make a reinforced starter strip. A maximum of one-half inch is suggested. If it is too large, comb distortion can result. A final advantage is that the comb is built according to the nature of the bees themselves. The resultant cell size, therefore, is potentially much more "natural," (based on the bee that built it) than that constructed on wax foundation. Some believe much of what presently ails modern beekeeping is the manipulation of insect size via "artificial" foundation.

The use of small-cell sized foundation and other sizes, including no foundation is currently being evaluated by several beekeepers who report their successes and failures across the Internet via the Biological Beekeeping Discussion list.[14] Top-bar beeping is perfectly suited to this kind activity. The results achieved will be the topic of an upcoming column. In the meantime, all you restless beekeepers out there might consider if top-bar beekeeping calls to you as strongly as it does to some of your colleagues. BC

Dr. Sanford is a former Extension Specialist in apiculture at the University of FL. He publishes the APIS newsletter; apis.shorturl.com

10World Wide Web site, accessed June 18, 2003 www.ccdemo.info/GardenBees/KTBH.html.

11World Wide Web site, accessed June 18, 2003 home.attbi.com/~thomas24/TBH.htm.

12Beesource.com World Wide Web site, accessed June 18, 2003 www.beesource.com/eob/althive/.

13Beesource.com World Wide Web page, accessed June 18, 2003 www.beesource.com/eob/althive/birkey/index.htm.

14Biological Beekeeping Discussion List at Yahoo.com, accessed June 18, 2003 groups.yahoo.com/group/BiologicalBeekeeping/.

BEES & PEOPLE

Beeing A Good Neighbor Isn't Always Easy

Dewey Caron

Beekeepers seek to keep their apiaries where it's convenient for the beekeeper. In situations such as city apiaries or suburban backyards, such sites may lead to problems between beekeepers and neighbors. Murray Loring, in the preface to his 1981 book *Bees and the Law*, wrote:

"Man has often found himself in legal difficulties because of his relationships with animals. Dogs bite, horses kick and bees sting. Now if it is your dog or horse or bee and you received the bite, kick or sting, the matter usually lies directly between you and your animal. ...Introduce the third party into this potentially volatile situation and the possibility of legal action becomes very real."

We all believe it won't happen to us but consider the following:

Scenario 1:

A beekeeping family in Maryland with backyard colonies in a residential neighborhood that prohibited fencing between yards, is sued after an accident involving their bees. A 21-month child visiting next door was left unattended briefly. The youngster wandered into the hive area and received many stings. The beekeepers were sued for $1.5 million on each of three counts (negligence, strict liability and nuisance). After much anguish and legal maneuvering, the homeowners insurance of the beekeeper agreed to pay the plaintiffs $7,500 (despite considerably lower actual medical costs) to avoid jury trial. The beekeepers fortunately have been able to renew their liability insurance, minus coverage for bees. They now have a sturdy fence around the apiary still at the same site.

Or

Scenario 2:

Lewis and Liz Books set up one package colony in their back yard in a wooded development on the edge of Dover, DE. A neighbor complains to the City that the bees are harassing her, stopping her from enjoying their property and that they are a nuisance. City inspects and finds no reason to prevent beekeeping. Five neighbors petition the City Council to change the existing animal control ordinance to specifically prohibit beekeeping. Set back proposal is drafted and numerous individuals including State Dept of Agriculture seek to kill, change or soften impact; beekeepers moves colony from their backyard. Ordinance passed six months later stipulating a bee colony "...shall not be located closer than 150 feet from any residential structure, hospital, public eatery, church, office or school" and for good measure concluded with "Any beehive that is declared a nuisance by a majority vote of the city council maybe be required to be removed or relocated."

Or .

Scenario 3:

Citizens of Chicopee, MA petition their selectmen to ban beekeeping in the city, but the local beekeeper association lobbies successfully against a ban. The Board of Heath chairman begins to declare bees a public nuisance and health hazard and orders beekeepers to move their bees from the city or face court action and a daily fine. Two city beekeepers, Henry Parzychowski and Joseph Mordzanowski, fight this action. They receive much unfavorable publicity from the press but obtain a not guilty verdict as the judge rules that bees are not a health hazard or nuisance to neighbors.

These are real situations that encompass neighbor dispute situations all too frequently faced by beekeepers. With bees you might witness upset neighbors, uninformed public officials, citizens concerned for their safety over (highly unlikely) stinging events and plenty of misinformed parents about bee sting allergies. Neighbor problems, although certainly not a new problem, seem to be increasing. Some are the result of rapidly expanding suburbs where farmers, beekeepers and rural activities are suddenly coming face-to-face with neighboring homeowners. Others result from misunderstandings and misplaced or unfounded

fears people have about being stung. Often the bees are a focal point of personal relationship problems. Outcomes too often result in hastily enacted legislation based on faulty and/or too few facts about bees and bee stings. They are often instituted based on one or at most a few complaints, usually with no actual damages.

Locations with neighbors in mind

The point of view, expressed in the cliché, "out of sight, out of mind" recommends that urban/suburban beekeepers do everything possible to hide their bee hives. Use of bee houses, platforms, shrubbery, camouflage paint, tall fences, and other approaches might be practical in some situations, but may not be feasible in all. The real estate saying LOCATION, LOCATION, LOCATION applies to urban/suburban beekeepers and suggests the beekeeper should first consider neighbors ***before*** the bees or him/herself.

There are several things beekeepers can, and perhaps always should, do to avoid problems: BEEKEEPING GOOD NEIGHBOR PRACTICES

1. Keep bees out of sight as much as possible.
2. Keep a gentle strain of bees.
3. Work bees gently to avoid stinging behaviors.
4. Do all manipulations in ways to avoid robbing.
5. Take precautions in mowing grass or trimming shrubbery around colonies.
6. Have a constant water source for the bees by the colonies.
7. Manage to control swarming.
8. Manipulate bees only during ideal weather conditions.
9. Don't keep too many colonies in your apiary.
10. Direct bee flight away from neighbors or public property and preferably above 6 feet high.
11. Sweeten neighbors' attitude with gifts of honey.
12. Know bee biology and management.
13. Keep number of supers reduced so colonies don't become stacked high.
14. Fence your bee hives, ideally using shrubbery to create a vegetative cover.
15. Remove and extract honey in a reasonable way to avoid confused/robbing bees.
16. Carry adequate liability insurance.
17. Belong to and actively participate in local and state beekeeping organizations.
18. Abide by local and state laws on beekeeping (including registering if required).

Not all beekeepers can meet the bee's needs and still have neighbor isolation in their apiaries.

When Problems Arise

Honey bees are considered by some to be pests posing as a health hazard when they sting. Feral nests and swarms are often viewed as pests also, to be removed for safety reasons. On the other hand, honey bees are valued animals of the community, providing honey and beeswax but more importantly, free pollination. The urban landscape would be very drab without the presence of pollinating insects such as honey bees and butterflies.

A beekeeper can do little to keep bees confined to their hive or the owner's property. Legal action does nothing to reduce the wild colonies nor does it eliminate yellow jackets or other stinging insects that are often the real culprits in stinging fears. The honey bee per se is legally considered *ferae naturae*, that is, a wild animal. When a nuisance arises it is not the "fault" of the honey bee but sometimes problems can be attributed to the way the bees are managed.

Beekeeping neighbor problems frequently take one of three routes:

1. Zoning
2. Laws, statues and ordinances
3. Court cases involving bees

Zoning

Zoning, strictly speaking, is the regulation of building, structures and land according to its nature and use. Zoning regulations are imposed by duly constituted governmental bodies and must bear some reasonable relationship to public health, general welfare and citizen safety. Zoning ordinances can legally prohibit or restrict beekeeping (by governing hive placement relative to property lines for example) in a city, town, township or even county.

One problem beekeepers may face with zoning is the interpretation of an existing regulation. If beehives or beekeeping is specifically mentioned, a beekeeper in violation can be fined or penalized as specified by the ordinance. Sometimes, however, bees may be termed livestock or an agricultural animal/pursuit while at other times labeled as household pets and still yet in other cases as a hobby. Varying interpretations sometimes lead to problems.

Individuals in conflict with zoning usually have appeal rights when informed of noncompliance. Depending on the wording or interpretation, some negotiation may be possible. Beekeepers, as well as everyone else, of course, can change a zoning ordinance but this is usually extremely difficult to do. Individuals can and do obtain a variance or may be eligible for a non-conforming use by virtue of continuing an activity that predated the enactment of the zoning relations.

Laws, Statues and Ordinances

It is perfectly legal to write laws or ordinances that prohibit or restrict beekeeping. As with zoning, it is

Continued on Next Page

NEIGHBORS ... Cont. From Page 21

far easier to prevent new laws or ordinances than to try to get existing ones changed. Thus, if a beekeeper is faced with a proposal that could become a law, he or she should never take anything for granted.

The steps to fight a proposed new law or ordinance, or to change an existing one, depend on the circumstances. Three necessary steps are:

1. Do your homework
2. Get help
3. Be prepared

DO YOUR HOMEWORK. First check local laws, ordinances, zoning restrictions and nieghborhood regulations that may apply. Be sure you understand them. If you have been cited, or legal action threatened or imposed on you, you must know exactly what it is you are dealing with. You must become as knowledgeable as the public employees and agencies you will encounter.

You may find knowledge of neighboring jurisdictions helpful also. This way you might be able to draw some comparisons. Are there any exceptions or exemptions you need to know? For example, if you go to a hearing and argue that you know that a local museum or school has an observation bee hive, and therefore you should be allowed to keep your hives because they have one, you must be sure educational institutions or museums are not excluded in the language of the law or ordinance under which you are charged. Similarly if you are to cite a beekeeping neighbor be sure he/she is not also in violation. If there are such exemptions, you might qualify if you know what they are.

GET HELP. When a beekeeper is faced with a neighbor problem, whether through zoning, ordinance or a damage suit, ALWAYS SEEK HELP. You are going to need people on your side. Those you need to seek out for assistance are neighbors, organizations and media who can help you make your case. Perhaps ask friends and neighbors to sign a petition or send letters on your behalf. Give them the information and names/addresses of responsible officials. For any governmental agency numbers do count. If a hearing is scheduled, try to get as many sympathetic supporters to attend and offer support as possible.

Local, state and regional beekeeper associations should be asked to provide help. Some bee associations have legislative committees. Other beekeepers may have had similar experiences and bee groups might have the resources you will need in your fight. They can share experiences, pool resources for legal advice, offer vital support and give you the information you need to mount an effective defense. Even if they do nothing but express support you can take that message since they are taxpayers/voters.

Mass media, such as radio, newspaper, TV might be useful allies. They want facts, not opinions. Be brief or they'll avoid you. You might not get the favorable support you seek. Don't neglect local elected officials. In effect they are your paid employees (but don't always act as such). Most are honest and willing to seek an equitable solution but they will seek to satisfy the plaintiff and might attempt a solution that potentially affects many innocent citizens without knowledge of the consequences of their proposed "solution." Remember that you can win more people's cooperation with a pleasant approach than with a sour one.

BE PREPARED. You will have to deal with people in beekeeper-neighbor problems. After you have done your homework and gotten help, be prepared to talk to government officials and a hearing board of some sort. Remember that these board members are local citizens like yourself. Approach them with a friendly, informed attitude. Be fully prepared to present your case informally or at a meeting. You probably will have very little time to make your presentation. It is critical to BE ORGANIZED and COVER PRIORITY POINTS.

You will need to say something about why you keep bees and of course, cover the importance of bees to the natural environment. The neighbors and a hearing will not want to hear a long discourse about bees. They will be interested about stings and the fact that you get stung as you do your hive manipulations. Be sure to include information on yellow jackets which are more severe a stinging problem than your honey bees. They will need to know that you can't confine your bees to one site and that there are things you do to provide for their needs (water close by, barriers so they fly over people or at least not through the neighbor's patio for example). Finally point out that existing laws or an official's interpretation of an existing zoning ordinance may have far larger ramifications than just "solving" the existing condition. Bans on bees won't ban feral bees or do anything to reduce yellow jacket stings. Provide published guidelines for bee/people neighbor relations by authorities, by beekeeping organizations, or by other government sources. If possible, make contact with 'experts' (university people, commercial beekeepers, nature center people, even exterminators) who support your cause, and have them, in writing or in person, testify.

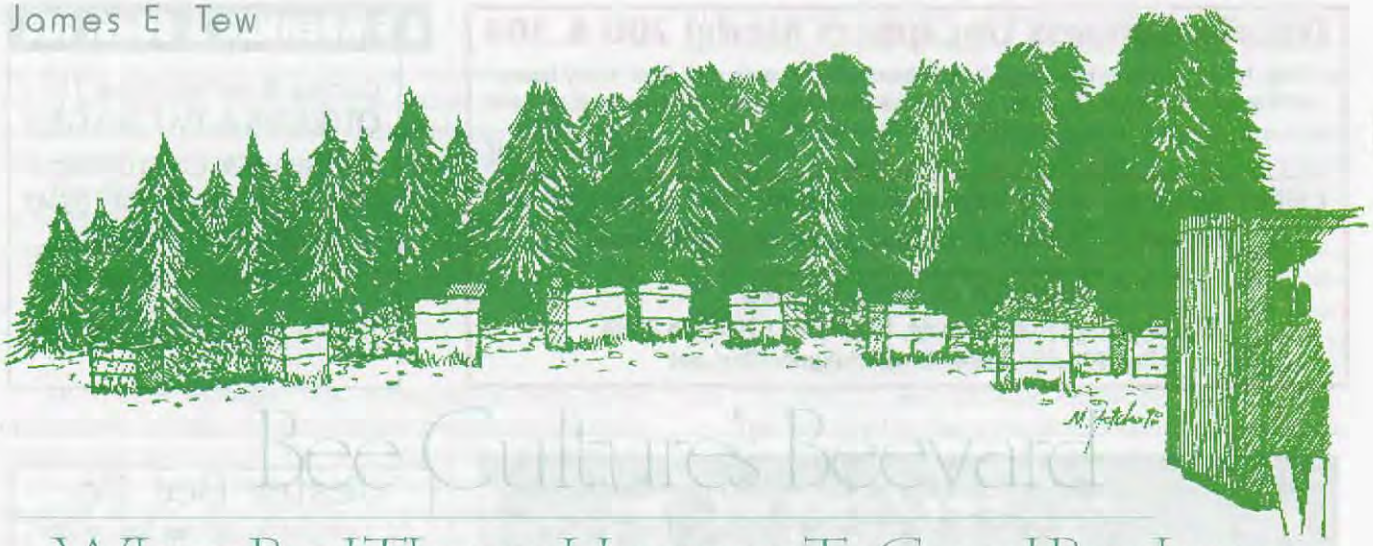
Bees and people can be good neighbors but not in all instances. Some yards are just not very suitable as an apiary and some neighbors are not going to be reasonable no matter what the "real facts' are in the situation. It is most frequently the beekeeper that must make some accommodation in such circumstances. If too many colonies perhaps it will be an agreement to reduce the apiary size. Frequently relocation of the colonies from a property line or a fence erected can solve the "problem." Changing your colony manipulations may defuse a situation. Mostly however it is the beekeeper who must find an alternative apiary site. Isn't that far better than to lose a friendly neighbor?

If you THINK NEIGHBOR'S FIRST you too might enjoy good luck and bountiful harvests with urban/suburban apiary locations. **BC**

Modified from a talk on Urban Beekeeping at the 25th Annual Tri-County Beekeepers Association Workshop, Ohio State University –OARDC, Wooster. OH March 1, 2003

Dewey Caron is a professor at the University of DE, where he teaches and is the Extension Specialist in Apiculture. He is the author of several books on bees and beekeeping, and a frequent contributor to these pages.

James E Tew



Bee Culture's Beeyard

When Bad Things Happen To Good Beehives

Downsizing good hives to runt hives

Elsewhere in this issue I discuss the perpetual challenge beekeepers have when dealing with small, weak colonies. Frequently, diseases and poor queens are the causes, but other common reasons for good hives going bad can be cataclysmic – something real bad abruptly happens to good hives.

"One of your hives is on the airstrip runway"

Several years ago, a phone caller told me that one of my hives was several miles out of town on an old airstrip and, "bees are flying all over." I could not make any sense of the conversation. I was not missing a colony and I certainly had no bees on that side of town. The caller insisted saying that I had branded equipment with my name on it at the crime scene; otherwise how would he have gotten my name.

I checked in the yard behind my house and there was an empty spot where one hive had been sitting. I dashed out to the old runway, and there in a crumpled heap was one of my hives – with a few bees flying about – smashed and destroyed. Strangely, it appeared to have been run down by a car. Beehive parts, splintered wood, wax, and bees were scattered everywhere. I still have no explanation as to why someone would steal a beehive and then literally execute it.

It had been a good hive, but now it was a disaster. I assayed the extensive damage. I would need a complete new hive and a queen. Nearly all of the brood was destroyed. The bees were demoralized and confused. Though I am tender-hearted, this was just a dead loss. It was Autumn. This colony would not recover from this attack. I moved the clutter off the unused runway and cut my losses.

When bad things happen

The most common big "bad thing" in beekeeping is a crashed semi loaded with bees. It makes the news and people are intrigued by the event. On June 22, 2002 in Claycomo, MO at Interstate 435 and Insterstate 35 North a tractor-trailer carrying more than 500 beehives flipped on its side. The cargo spilled all over the highway, forcing crews to shut down an off ramp for a time. In this case, road crews waited for the owner to send people down to clean up the mess. Naturally, it made the news. Some states even have volunteer beekeepers who are prepared, so much as possible, for such an unlikely event. Dramatic that they are, few of us as beekeepers are likely to be involved in such large scale disasters. Our problems are normally much smaller and much more local. Are there procedures to be followed during more common bad bee events?

My brother's home yard before the storm .

and after.

My brother, Dwight, has several yards in Tennessee, which I've talked about before. He keeps his equipment and bees highly maintained. What could go wrong?

Then the tornado struck

In May, 2003, during stormy weather, a small tornado – or at least the high winds from a nearby tornado – struck my bother's house and beeyard. His house, though damaged, was repairable and all is okay now, but the beehives took a beating and are still recovering. The entire yard was hit, but some hives were damaged more than others – just as a tornado does with homes and buildings in its path.

The yard was a wreck. In the photo of the damaged yard, the pile of rubble in the center of the photo is remnants of a hive that was totally destroyed. Those of you having kept bees for some time will have probably read that bees are testy around storm time, possibly due to the magnetic fields from the clouds, or whatever. In this case, bees were disorganized. Orienting structures were destroyed. Bees were lost and defensive. So, when the beekeeper showed up, the bees took a dim view of his assistance programs. It was a hot, muddy, miserable job with numerous bees stings adding to the discomfort.

Some hives were strangely undamaged, but were in difficult situations. Several were just ever-so-barely missed by falling trees, but were then left with trees in "widow-maker" positions.

It is difficult to get a professional chainsaw operator to come into a beeyard for the cleanup so Dwight was the principle chainsaw operator How can one be helpful to colonies in difficult situations when the colonies don't want your help? It's nearly impossible to walk. It's hot. Bees are flying all about looking for anything to attack. On top of all this, you must operate a chainsaw. There is simply no right way, no standard recommendations, no standard protocol, to implement in such chaotic situations.

The photo with the tree on top of the hive was particularly challenging. How to remove the tree without causing more damage to the hive was the obvious question. Since it was partially holding the tree up, the

How to remove the tree without more damage to the hive?

hive could not be moved. All Dwight could do was to continually remove small parts until bigger parts could be accessed. Several of the hives were buried in brush and limbs, but were otherwise okay. These were left until last whenever possible.

It was not just the hives

It was not just the hives that had to be dealt with. The roof of my brother's house was seriously damaged (and it continued to rain for several days.) Large trees were down. Lawn chairs and outdoor fixtures were blown all about. Finally the beeyard was extensively damaged. It was a significant amount of work and expense (the hives were not insured) from which to recover.

My point is Dwight's good, producing hives were abruptly scrambled. Some were left in good shape while others were seriously damaged.

The "Runt" principles apply

Suddenly Dwight had runt hives. The same principles useful in helping weak colonies are appropriate in helping colonies that have been damaged as had these. They will not recover quickly. Some will probably still die. None of the hives will be in great shape for the upcoming winter due to this storm.

One final insult

The one final significant insult was that all the debris coming down a nearby stream jammed the stream causing flooding where it had never happened before. As soon as the hives were restored, most of them had to be moved out of the way of high water. What else could go wrong?

Fire in the Beeyard

Jimmy C, from Birmingham, Alabama was notified that there was a fire near his shop and within his beeyard. From wind and rain in my brother's yard to fire in Jimmy's yard. It sounded like Biblical plagues. Apparently, kids shooting fireworks at a nearby house inadvertently set the fire. As are many Alabama yards, Jimmy's bees sat beneath pine and oak canopies. A thick mat of pine needles was everywhere. (It's ironic that pine needles are a common smoker fuel – useful for managing hives, and burning up beeyards.)

A few hives were okay – just buried.

Continued on Next Page

BEEYARD ... Cont. From Page 25

The first thing to do

The first thing to do was to deal with the survivors and toss the damaged stuff. Jimmy maintains a nice, neat yard. It was a depressing job.

As in the case of tornadoes, a wildfire strangely reprieves some hives while totally destroying others. Several hives were damaged – some extensively – but the bees survived. A few colonies were unhurt, but many were literally burned up.

Later, during the Spring season, several of these seriously scarred hives were able to produce some of a honey crop, but they clearly bear the markings of the catastrophe they survived.

Bee equipment destroyed by fire.

Every situation is different

I have given three examples of good hives suddenly being bad hives. They didn't wither due to diseases or mites and the respective beekeepers' management was adequate – even good. These particular hives experienced some very bad luck. How can you, the beekeeper, be prepared? What should you do in emergency situations? I can't give explicit advice, but I can offer some suggestions.

Employ beehive triage

Mentally group the damaged hives into three groups: Those that are going to die no matter what you do, those that might die if you don't help, and those that will probably live – even without your help. Work on the second group – those you might be able to help. The ones that are going to die can be combined with others later or they can actually be allowed to die. It will be your call. How much energy and time do you have? Save the ones you can, but cut your losses on the ones you can't.

Your protective equipment

If ever you needed protective gear in good shape, you need it during a bee crisis. In fact, your protective gear, combined with your experience, is what makes you an asset in bee disaster situations.

If time allows, suit up properly, and in a heavy-duty fashion. In my brother's case, he was handling a chainsaw while bees attacked him and branches grabbed at his protective gear. Don't wade into this situation half loaded. Have several smokers fired off. The bees will not see this as a bee-humanitarian effort.

Get help

If you possibly can, get help from a friend. Two (but not many more) is far better than one. But your assistant must be suited up as well as you are. I admit that I don't live in the real bee world, but I do keep a few pieces of new protective equipment on hand in my lab for those special occasions. Protect yourself and your helpers.

Take tools

Along with the regular bee tools, take tools to keep the saws running and cutting tools for clearing brush. In my brother's case, a small hydraulic jack and several long poles or 3x4s were useful as levers. Have something with which to improvise.

Two survivor colonies but with extensive damage.

Badly burned brood nest boxes sporting fresh supers.

Don't go empty handed. A heavy duty truck is very helpful.

Take extra hive equipment

Though you will be able to salvage something, you probably don't know what it will be. Take extra equipment. I like to use self-contained four or five frame nucs. On my nucs, the bottoms are attached and the top is simple board. I would take some extra drawn comb and some new plastic frames. I am quickly good-to-go.

Bad things happen to good hives

At some point in your future, something bad will happen to some of your hives. Vandalism? Storms? Fires? Bears? Floods? Locusts? Frogs? Who knows? Will I be prepared for my challenge? Probably not. How can I prepare for everything? Like frogs! Other than my few suggestions above, all either you or I can do is evaluate the situation, save as many hives as we can and get the situation under control as soon as possible. Bad times make good stories, but we don't need too many good stories. Good luck. BC

Dr. James E. Tew, State Specialist, Beekeeping, The Ohio State University, Wooster, OH 44691, 330.263.3684, Tew.1@osu.edu; www2.oardc.ohio-state.edu/agnic/bee/; www2.oardc.ohio-state.edu/beelab/

A SIMPLE DRYER

Don Sperry

Well here it is, the end of the honey season for another year. Now the question is, what to do with all of those nicely filled, but as yet *uncapped* frames of honey. I concentrate my unfinished frames down into fewer supers as the season nears end but still seem to end up with a lot that needs to be stored.

I only consider myself to be a hobby beekeeper but with about 30 colonies now, the freezer is no longer big enough. I can't leave the honey in place when using mite treatments, so what to do? A quick look through my various bee supply catalogs only reveals one honey dryer priced at $11,000.00. Not an option. Time for another do it yourself project I guess.

The solution that I came up with works so well that I thought someone else might want to give it a try also.

The first step is to run all of the frames with uncapped honey in them through the extractor, removing only the unripe honey and storing it separately.

Next I purchased a "Sunbeam" rotisserie model #4785 at my Wal Mart store. The cost was about $60. Then from a Smart and Final store, which is a retail grocery and restaurant supply, I bought 12 pizza cooking trays. They are really expanded metal aluminum screens. They cost $3.00 each and the nine-inch size are the ones I needed.

The next thing I needed were spacers to go between the screens. I used the plastic lids for two pound honey jars. They are 2½ x ½ inches. Using a 23/65 drill bit, I put a hole through the center of all of the screens and lids making a nice fit on the rotisserie shaft. After removing everything from the shaft, start assembly by first sliding three lids on, open end first. Then alternate with screens and lids until the stack is complete. Finish by sliding on the other adjustable splash guard against the last screen applying a slight tension so they will not slip. Fourteen lids will be required.

I then bought a 9x13x2 inch "Pyrex" baking dish and a small electric fan. After removing the rotisseries door, I inverted the drip pan to raise the floor level slightly and slid in the dish and the screen assembly together, setting the shaft on it's supports. Move the dish to the rear and to the left as far as possible without touching the screen on the right side. This promotes circulation of the honey as it is lifted by the screens.

Then turn the timer on for 30 or 40 minutes. Pour in three quarts of the unripened honey. The gear drive will try to slip at first, so help it through the first revolution or two by hand until the honey begins to spread onto the screen. The last thing to do is set the fan right in front of the dish on low speed, just enough to circulate the air but not cool too much.

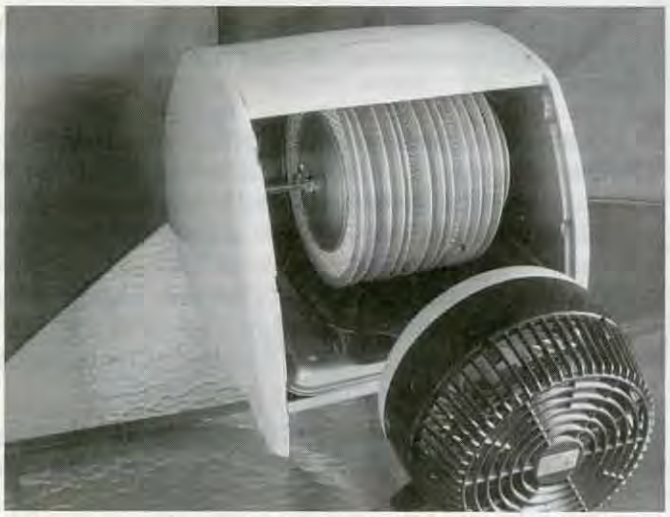
After 30 minutes the honey temperature will rise to about 140°. After the unit shuts down and cools a few minutes, set the screens into the dish, turning them around slightly and carefully remove them together.

Using this drying system, I was able to reduce the water content in my 14 *gallons* of unripened honey from 21.2 percent down to 17 percent over a period of 24 hours.

This also provided access to the capped honey in those partially filled frames. Although extra work was involved, extracting the frames twice, I was able to gather about three times the amount of saleable honey than I would have otherwise expected.

In addition, you can remove those screens and roast that chicken for dinner tonight! BC

Anyone with a question, feel free to call or write: Don Sperry, 224 E. Washington Ave., El Cajon, CA 92020, 619.401.8919.



Pulling Honey

Step up to escapes or fume boards this year. Here's how.

Jeff Ott

Shortly (maybe already if you live in the south), you'll begin to see the benefits of a whole year's labor. If all has come through as planned, you should have several honey supers on each of your hives by now. Have you taken a look at them? You should be able to see frames of capped honey. In fact, if you've had a great season with great flows, you'll be dealing with the penalties of violating the bee space law. In every space over 3/8" wide, you'll be cutting away burr comb, full of honey.

How are you planning to take all of that honey off the hive? If you have only one hive, you might be considering just brushing the bees off each frame. This can work if you can place the 'cleaned' frames into a covered super or some kind of covered plastic box in your truck, wheel-barrow or even all the way to the kitchen sink! However, most beekeepers with two or more hives find this too labor intensive. In addition, brushing tends to aggravate the bees and you end up with many bees in the air. This is not something you want if you have neighbors trying to enjoy their own backyard.

While some big operations (or those beekeepers with small operations but heavily subsidized by other employment and a yearning for 'toys') may use some type of 'bee blower', most of us use some type of bee-escape system or a fume board with some type of repellant applied to it. Since most of us can only justify to ourselves (or the *household comptroller*) a cost effective solution of removing bees from honey supers, this time we'll look at using bee escapes and fume boards.

Bee Escapes

Bee escapes are mechanical devices that are placed between the honey super to be cleared (above the escape) and the super below it (where the bees escape to). There are three commonly used bee escapes, the Porter bee escape, the conical bee escape and the triangular screened escape board.

An inner cover with escapes.

The Porter Escape

The Porter escape made its debut in the late 1800's. It looks today as it did over 100 years ago, although today they're made of plastic as opposed to tin. It is a simple device that allows bees to travel in only one direction through spring clips. If you ever wondered why there is an oblong hole in the middle of your inner cover, this is why. The Porter bee escape will fit it perfectly.

To use the Porter, mount it in your inner cover with the large entry hole facing up. At the beehive, place the inner cover with escape firmly in place directly *underneath* the honey super to be cleared, again with the large entry hole facing up. Remember, when you are removing honey to be very judicious with the use of smoke, especially if you are removing comb honey (either rounds, cassettes or cut). You do not want the bees to open the cappings and start engorging themselves with honey.

With the escape in place, put the hive top back in place and come back in about 24 hours to a bee-free honey super. Well, usually bee free.

Conical Bee Escapes

The Conical Bee Escape is another simple device that works to allow bee travel in only one direction. Instead of using spring clips to direct traffic flow out of the super, the conical escape is made of multiple little cones, reminiscent of red traffic cones. The bees enter into the large end of the cone and emerge out the small end. They are unable to return in the opposite direction. Most commercially available conical boards are made up of 10 cones to speed the removal of bees. It is placed on the hive in the same fashion as the Porter. The bees naturally move out of the super within 24 hours and you can then remove the super.

Continued on Next Page

ESCAPES ... Cont. From Page 31

Triangular Screened Escapes

These escape boards are a neat variation on the same idea of providing a one way path for bees to move out of a honey super. Starting with an inner cover, the center oval is re-cut into a large circle. On the underside of this hole there are two triangles formed by small strips of wood, one triangle set inside the other. The corners of the triangles are left open just wide enough for one bee to pass. When covered by the screen, the hole, and triangles form a very effective one way maze for the bees to escape and not return. You use this board as you would any of the other two types.

General Bee Escape Use Thoughts

Bee escapes have their limitations. But if you know about them in advance, you can easily deal with them. The biggest problem for beekeepers is that a second trip to the hive is needed to remove the super. It takes time for the bees to move out of the super. Of course, if the hive is in your backyard, this may not be a problem for you.

Bee escapes also work effectively when used on a bee tight super. If the bees can squeeze through a crack or if bees can enter from the outside, you will open the super to as many bees as when you put on the escape. Use tape to cover any holes or cracks.

Bee escapes clog. One of my first attempts at using a Porter ended with a super full of bees and a drone dead and wedged in the spring clips. I guess the exodus ended when he died. This is one reason beekeepers who favor the Porter use a homemade escape board with four or five Porters. If one clogs, the operation doesn't end.

Another big problem is this: a bee escape is not as effective when used to empty multiple supers at the same time. I've found that the natural tendency for bees to move down out of the super is somewhat reduced when there are two or more supers in place above the escape. At this point, you may need to wait several days before removing the supers, and this may present additional problems.

Pay attention to the weather reports. Once, I used a single porter escape board late in the season and the temperature dropped below freezing that night. I arrived the next day and had to shake the dead bees out of the super. Effective, but not really the ideal way to go into the winter!

The same goes when the temperature rises. If you use an inner cover with a Porter escape, realize that you've removed the ability for the bees to properly ventilate and cool the super. If the temperature spikes after the escape is placed on the hive, you risk losing the crop or bees or everything in it in one giant meltdown. If you use a bee escape and the temperatures are still high, make sure you provide ventilation, but not additional entrances.

Sounds like a lot of negatives, doesn't it? Well it was for other beekeepers and that's why someone thought of driving bees out of supers with a repellent chemical.

Fume Boards

A fume board is a basic device. It looks like a telescoping cover, but it is smaller and doesn't fit *over* a super, but rather, it sits direcly on top of the super. Inside the fume board is a liner of flannel or other absorbent material that sits against a piece of metal that forms the actual top of the board. That's all there is to a fume board. What makes the fume board work is what is placed on the flannel cloth – the repellent – that drives the bees out. In today's catalogs, you'll find three different products; two of which are chemically very much the same.

Bee Go® and Honey Robber®

These two use the active ingredient *butric anhydride*. One whiff of this stuff and you'll know why the bees run (don't walk) away from it. The only difference between the two products is that *Honey Robber* has the addition of a second chemical to make it smell better. You'll realize that this is a relative term. It smells *better* than *Bee Go*, but it still repels the bees enough to drive

Apply enough smoke to start moving bees, apply repellent, put fume board on and wait.

them out of the super.

Regardless of the product, the odor is significant. Consider it fair warning that you do not want to splash it on you or your clothing; you *never* want to take it into your house and you *NEVER* want to spill it in your car or truck. If this happens, you won't even be able to *give* the vehicle away.

A regular pencil should easily fit in the opening. if snug, bees won't fit. Bend the springs before *you start.*

Fischer's Bee Quick®

This is the new product on the market today. Made from a "natural, non-toxic blend of oils and herbal extracts" it sounds like something you'd want to take a bath in, not use to remove bees from honey supers. The prime selling point on this product is that it does not have an offensive odor. The label says to 'Refrigerate After Opening', but the household comptroller vetoed keeping it in our regular 'fridge' However, this material can be removed if spilled, and won't ruin your clothes, your car, or your home.

Using the Fume Board and Repellant

Regardless of the repellant you chose to use, they all work on the same principle. Once sprayed onto the fume board, the chemical vaporizes and releases the odor(s) that drive the bees out. Those beekeepers that have multiple hives to remove honey use two or more fume boards at the same time. While they are removing the supers from one hive, the other fume boards are clearing the next set of supers down the line.

To get started, enter the hive as usual by popping the top and inner cover. Direct a few puffs of smoke into the super, just enough to get the bees moving, but not stop and engorge on honey. Next squirt or spray your repellant of choice onto the fume pad in a zigzag pattern. Don't soak the pad but use enough repellant to ensure coverage over the frames of honey, and then place the fume board on top of the honey super (always read the instructions).

How long you leave the fume board on depends on multiple factors, such as ambient temperature, humidity, sunlight, how much you've applied. The one truth is that the warmer it is, the faster these products will vaporize and drive the bees out. Generally, you should expect to remove the bees out of one super within 10 minutes, usually less. This is where the art of beekeeping comes into play. Only experience will tell you just how long is right for you, your bees and your location, but here are a few things to help you gauge the effectiveness of your technique:

- If it seems all the bees in the colony are piling out the front of the hive, you either, 1) Used too much repellant, 2) left the board on too long, or 3) all of the above.
- If you wait 10 minutes and pop the fume board off the super and honey bees are still peering at you from between the frames, 1) You've not used enough repellent, 2) It is too cool for the repellant to work, 3) You have brood in your honey super – Repellant will not drive bees off brood, and of course, 4) all the above.

General Fume Board Thoughts

Fume boards are the most effective means for many beekeepers to remove honey supers. They are cost effective and efficient. When used properly, you can easily clear multiple supers on the same hive of bees, at the same time without irritating the bees in the process. Few bees take flight during the process, unlike shaking, brushing or blowing bees from honey supers. I generally use *Bee Go*, and am used to how it works for me, but last year tried a bottle of *Bee-Quick* that was used the prior year and given to me to try. It was a little different than Bee Go, but I like the smell, and will try again this year.

You can count on *Bee Go* to smell worse than *anything* you've ever come across, dead or alive. *Honey Robber* smells 'better' when you get it, but whatever makes up the masking smell eventually wears off and you're left smelling the same *butric anhydride* as in *Bee Go.*

Pulling honey should be fun. It is why you've been doing all the work these past eight months or so. This is your harvest. Using the right tools, the right way, will make this job easier. By experimenting, reading and talking with other beekeepers in your area, you will hit a system that works (and smells) best for you. BC

Jeff Ott is a sideline beekeeper and photographer lving in Berthoud, CO.

HONEY OF A BREW!

Steve Burt

Make your own home brew, with your own honey. Here's a start.

Let me start with a confession: I like beer. In moderation, after working outside on a hot day, while cooking over a smoky barbecue, or just watching a Red Wings game on television, I enjoy busting open a bottle of beer. And my preference is for a tasty, full-flavored brew, not the insipid stuff in cans off the supermarket shelf. One good bottle of real beer, though, is plenty enough for me, as being drunk is not funny, safe, or enjoyable.

But the whole process of brewing a quality alcoholic beverage seemed interesting, though it also sounded awfully complicated – brewing the beer right, keeping it clean, and getting the stuff in bottles. Also, as a beekeeper, it has been an intriguing idea to see if a better beer could be brewed using honey as an adjunct ingredient. **Good news! Honey, hops, and malt go great together in the brew pot!**

Not Rocket Science

Brewing modest amounts of beer is not terribly complicated. Homebrew stores sell all the necessary supplies, equipment, and ingredients, including dried malt extract, brewer's yeasts, and hops in leaf or pellet form. And there are many good books on brewing quality beer. You can even buy beer kits with everything in a can or a bag, ready to be diluted and seeded with yeast. To me this is like heating up someone else's canned soup. On the other hand, a really serious brewer can spend very serious money and actually "mash" the raw grains, gaining total control over the process, and make oceans of beer in "mash tuns" and filter the brew in "lauter tuns" before bottling it by the barrel.[1] A regular microbrewery in the basement is possible. It was nice to learn that brewing good beer in reasonable quantities is much easier and cheaper than that.

The scale I operate at involves boiling the dried malt extract in a pot of water for an hour, while adding the selected hops pellets, a few ounces of honey, and maybe some ounces of adjunct grains, all in a kitchen-sized stock pot. My brew pot is a white, four-gallon steel and porcelain stockpot (which sure looks a lot like that white diaper pail of my early childhood). The resulting *wort* (unfermented beer) is then cooled to room temperature, and then siphoned into a three- or six-gallon glass carboy, topped afterward with enough water to properly fill the carboy, "pitched" with a slurry of moistened yeast, and allowed to ferment for a week or two. The six-gallon carboy holds five gallons of wort, and will produce almost fifty bottles of excellent, homebrewed beer, ready to drink maybe four weeks after the brewing phase. The three gallon carboy holds 2½ gallons of wort.

What does all this cost? For well under $100 in equipment, one can begin brewing very decent beer. The cost per finished bottle is estimated at less than half the cost of buying good, premium or imported beer.

Beer bottles are almost free, but the twist-off types will not work. You will need to get Sam Adams, Widmer, Anchor Steam, Grolsch, Heiniken, Beck, or other quality beers that still have *real* bottle caps. The absolute best bottles for the home brewer are the Grolsch swing top bottles, with the snap down springs and rubber gaskets, but those vessels cost about $2.50 each new with sixteen ounces of beer.

Honey in the Beer

The honey is used in two distinct ways in the brewing process. First, in a six-gallon batch, is added four to eight more ounces of honey right into the boil. If making a two and a half gallon batch, the quantity of all the ingredients is halved. No surprise next, the honey boosts the sugar available for the yeast, making the beer more alcoholic. The honey in this quantity also seems to add a mellow and pleasant, "mossy" quality to the taste and aroma of the beers. I find these beers a bit unique, yet absolutely delicious.

Then, after the fermenting in the carboy has stopped, usually in five to 10 days, the beer is quietly siphoned into a plastic tank. In a six gallon batch, I add about 2½ ounces of additional honey, first heated by microwave in a few ounces of water. The additional honey (or other sugar source) is known as a priming sugar, giving the remaining yeast in the brew something to ferment after the bottling process is complete. In home brewing, it is this priming sugar that produces the carbonation and foaming head in a finished beer. The brewing process is literally finished in the individual bottles. A priming sugar is absolutely necessary

Continued on Next Page

[1] Miller, Dave, *Dave Miller's Homebrewing Guide*, Storey Books, pp. 101-112

BREW ... Cont. From Page 35

or the beer will be "flat," and lack a great deal of its liveliness and flavor. The priming process takes another week or two, but the beer grows clearer and tastier as time goes by. I have found honey to be an excellent priming sugar, leaving a clear, but heady bottle of beer.

Only one of the homebrew texts I have seen, Charlie Papazian's *Joy of Homebrewing*, seriously discusses honey as a beer adjunct and only briefly mentions honey as useful for priming beer.[2] That text recommends almost twice as much as I use, 4 fluid ounces (½ cup), and such a quantity might make the beer behave like gushing champagne when opened. Too much priming sugar could even lead to exploding beer bottles.

Other Adjuncts

For a homebrew hobbyist, certain other barley grains can be very useful, especially for darker colored and deeper flavored beers. **Crystal malt** is barley grain that was kiln heated rapidly after mashing, producing visible sugar crystals in the grain, and some of the sugar is of a higher complexity than dextrose or glucose. These sugars do not fully ferment in the presence of brewers yeast, and give the beer a redder color and slight taste of caramel. Crystal malt also boosts alcohol slightly. Anchor Steam is a beer that appears to have a notable amount of crystal malt in its recipe. **Chocolate malt** is a malted barley grain roasted to a medium brown color, adding a rich flavor and much color, but little or no increase in alcohol. **Black Patent** is a malted barley kilned to blackness. Dark beers, such as stouts and porters often have these adjuncts. **Roasted barley** is an unmalted barley which was kilned to a very dark brown. This adjunct adds much color and a taste recalling coffee. So-called red beers, as well as dark beers such as stouts, porters, and bocks are likely to contain this adjunct. Amber ales very likely contain some roasted barley in the brew to give it its distinct flavor and color. Darker beers are usually brewed with more or stronger hops, too.

The home brewer can crush modest amounts of these adjunct grains in a plastic freezer bag on a counter top, with a rolling pin. My old Corona corn mill, with the burrs set loose, can "crack" these grains perfectly. The adjunct grains need to be crushed into pieces, not ground into flour. Homebrew stores often grind small quantities at little or no charge.

Other sweeteners besides honey are sometimes added to beers, including sorghum, brown sugar, corn sugar, or even maple syrup. A famous dark beer called "Old Peculiar" contains molasses in the recipe, which may explain the name.

Things I do not add to beer are clarifying agents, seaweed extracts, gypsum, or artificial carbonation. Nor do I pasteurize the beer. It is as pure as possible, and the remaining cells of yeast remain to naturally carbonate the beer, as discussed above.

Beer styles

There are two major types of beers, and one minor variation. The most frequently encountered beer style in home brewing is the ale. Home brewers even have a lame, humorous expression: "Save the ales." Ales are simple to brew as they require room temperatures and rely on top fermenting yeasts. Lagers are beers that are typically brewed with bottom-fermenting lager yeasts at temperatures 10 or 15 degrees below typical room temperatures. They are then aged in refrigeration, in a process called "lagering" (resting) in German. Making real lager beer is fairly challenging for the home brewer. The final beer style is called steam beer, which is simply a beer made with lager yeast but brewed at or closer to room temperature, about 65 to 70° Steam beers by tradition are usually strongly hopped and contain some crystal malt. The famous Anchor Steam beer from San Francisco popularized this style. Steam beers are as easy as ales for the home brewer if a suitable yeast can be located.[3]

Hops

The hop plant produces flower cones which contain the bittering acids and flavorings that make beer the uniquely delicious beverage that it is. There are several dozen distinct varieties of hops in commerce. There are so called "noble" hops that produce the notable German, Czech, and Dutch lagers, including Saaz, Tettnang, Spalt, and Hallertau. Pilsner beers and Saaz hops are almost synonymous. There are famous ale hops from the pubs of Great Britain, including Goldings and Fuggles. There are powerfully bitter hops such as Northern Brewer and Perle, which are often used expressly to make a beer more bitter, while a noble hop is added later in the brew for aroma. Anchor Steam is a delicious, deeply flavored beer, which reputedly uses Northern Brewer.

In America, breeders have added Cascade, Liberty, Willamette, and Mount Hood, among others, to the hop family, in an attempt to add productivity and disease resistance to the classic European strains. Chinook is a new hop with a delicious, "piney" taste and plenty of punch. For great tasting beer, use good, fresh, well-sealed hops. They should still look green and smell good. Don't be afraid to experiment until you find your personal favorites. Just because a hop is famous for ale or lager does not mean you are forbidden to try it in your own, different style recipe.

My advice on hops is simple: Homebrew tastes great when there is enough, but not too much

[2] Papazian, Charlie, *The New Complete Joy of Home Brewing*, Avon, p. 174

[3] Moore, William, *Home Beermaking*, Ferment Press, pp. 1-6

"hoppiness" in the beer. For my tastes, that seems to be somewhere between 10 and 12 units of Alpha acid in a six gallon brew, and the Alpha acid content is clearly printed on the package (e.g. AA 5.3%). A really dark or otherwise strong brew, such as a stout or steam, might profit from just a little more hops in the brew. From crop to crop of hops, the AAU (Alpha acid units) will vary somewhat, so read the package and add enough, but not too much. Most recipes call for adding a half or more of the hops at the beginning and smaller amounts at the middle and near the end. The longer that the hops pellets are boiled, the more bitterness is extracted, but the more the hop aroma tends to dissipate.

Recipes

A beginning home brewer may be a little overwhelmed by the multitude of colors and flavors possible in home brewing through use of adjuncts and hops varieties, but beer produced in clean, reasonably sterile equipment never tastes bad, and each batch teaches the brewer something new. The wheat recipe is almost foolproof and produces a light colored beer with a nice, noble taste.

Basic Honey Ale

6 LBS Dried Malt Extract, Light Amber Color
2 Ounces Kent Goldings Pelleted Hops (10-12 AAU)
4 Fluid Ounces Honey
1 Packet Yeast (Munton's Ale or equivalent)
2-2½ Fluid Ounces Honey after primary fermentation for priming

Boil 2-3 gallons of water, add honey and first packet of hops. 30 minutes later, add 3/4 of second packet of hops. 20 minutes later, add final 1/4 of hops. Boil ten more minutes. When the wort has cooled, add yeast (first slurried in few tablespoons of water). When the ferment has stopped in seven-10 days, siphon into clean 5-gallon container, add priming honey, stir well, and quietly siphon into bottles.

Pale Honey Ale

6 LBS Dried Malt Extract, Extra Light Color
1 Ounce Northern Brewer (or Perle) Pelleted Hops (for bittering) (7-8 AAU)
1 Ounce Fuggles, Willamette, or Kent Goldings Pelleted Hops (4-5 AAU)
6 Fluid Ounces Honey
1 Packet Yeast (Munton's Ale or equivalent)
2-2½ Fluid Ounces Honey after primary fermentation for priming

Boil 2-3 gallons of water, add honey and bittering hops. 30 minutes later, add 3/4 of second packet of hops. 20 minutes later, add final 1/4 of hops. Boil ten more minutes. When wort has cooled, add yeast (first slurried in few tablespoons of water). When ferment has stopped in seven-10 days, siphon into clean five gallon container, add priming honey, stir well, and quietly siphon into bottles.

Wheat Beer

6 LBS Dried Wheat/Barley Malt Extract, Light Color
2 Ounces Saaz, Hallertau, or Tettnang Hops (8-11 AAU)
4 Fluid Ounces Honey
1 Packet Yeast (Munton's Ale or equivalent)
2-2½ Fluid Ounces Honey after primary fermentation for priming

Boil 2-3 gallons of water, add honey and first packet of hops. 30 minutes later, add 3/4 of second packet of hops. 25 minutes later, add final 1/4 of hops. Boil five more minutes. When wort has cooled to room temperature, add yeast (first slurried in few tablespoons of water). When ferment has stopped in seven-10 days, siphon into clean five gallon container, add priming honey, stir well, and quietly siphon into bottles.

San Francisco (Steam) Style Beer

6 LBS Dried Malt Extract, Amber Color
1½ Ounce Northern Brewer (or Perle or Chinook) Pelleted Hops (10-12 AAU)
4-8 Ounces crushed Crystal Malt (optional, but helpful for correct flavor/color)
6 Fluid Ounces Honey
1 Packet Yeast (Danstar Nottingham or equivalent)
2-2½ Fluid Ounces Honey after primary fermentation for priming

Boil 2-3 gallons of water, add honey and 1 ounce hops. 30 minutes later, add remaining ½ ounce of hops. Boil 30 more minutes. When wort has cooled, add yeast (first slurried in few tablespoons of water). When ferment has stopped in seven-10 days, siphon into clean five gallon container, add priming honey, stir well, and quietly siphon into bottles.

Further Reading

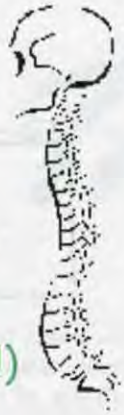
Further reading would be vital for someone inexperienced in home fermenting. What to buy and how to keep things reasonably sterile are clearly beyond the scope of this brief article. The undisputed Guru of home brewing is Charlie Papazian, and his happy advice at every step of the beer-making process is, "Relax, don't worry, have a homebrew!" At about 15 bucks, his book would be my one recommendation as the indispensable and enjoyable source for knowledge and technique for the beginning home brewer. Papazian's discussion of types of beers throughout the world is an education in itself. William Moore's paperback booklet, at about six bucks, is also a very solid purchase for accurate advice on basic brewing equipment, techniques, and good malt extract recipes. With either of these two books, you could brew decent beer immediately.

Dave Miller's book is much more technical, even scientific. For someone who is considering the investment of hundreds of dollars in mashing equipment to make hundreds of gallons of beer, his is a solid work. You will learn more about grains, water, beer chemistry, and yeast culturing than you ever imagined.

In conclusion, beer carefully made at home is very good. Beer made with the subtle goodness of honey is truly a very special beverage. Enjoy! BC

Steve Burt is an ocasional contributor to these pages, exploring a variety of subjects. He lives in southeast Michigan.

Back Exercises



(Before you lift those heavy supers!)

Jim Higgins

The object of the following exercise is to strengthen the muscles around the lower back in such a way that they will hold the lower spine in the perfectly stacked position it was intended to be in. This places the least possible strain on any part of the spine and its discs. For people like myself with a massive disc rupture, of the disc where the sciatic nerve actually comes out, it results in the least possible pressure being put on the nerve with the possibility of carrying on relatively normal activity without pain or the need for surgery.

As the doctor explained to me, nothing will work as well as what you have. Take care of it. For those who have strained the lower back, but have not done real damage yet, doing these exercises will give you a very good chance of avoiding all kinds of problems.

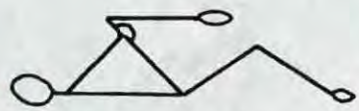
Start by using good posture, sitting up with a straight back. No slouching down. Don't stand on one leg, but on both, thus avoiding twisting the lower spine. When lifting, bend the knees and keep the back as straight as possible. Once you have the load up don't twist to either side, but move your feet around, thus avoiding twisting of the spine under load.

Once into the routine, spending 15 to 18 minutes to do the exercises can be done every other day and when you have problems do them every day or even twice a day. If you are like me you will find doing them every day is definitely better. Then if you miss a day once in a great while, it's no big deal. And on the occasion when you hurt it gets worked out in two or three days.

1.

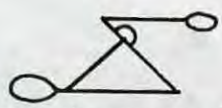
Start by laying on the floor or exercise pad on your back with knees raised to 45°, arms laying to the sides. The mid to lower spine is arched off the floor in the normal relaxed position. Now tighten stomach muscles etc. and force the back down onto the floor for its full length. (Do not pick up the head.) Hold this position for a count of five seconds and then relax. Take a breath and repeat. I count in fives to 50 thus 10 repetitions.

2.



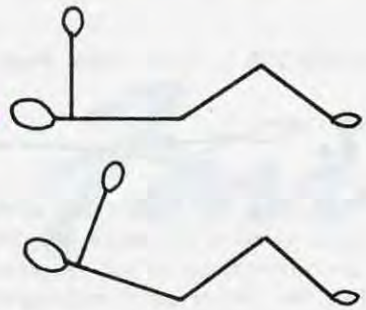
Start in the same position, now lift the right knee and clasp both hands behind the knee and pull it as close to the chest as is comfortably possible and hold for five seconds. Now repeat with the left leg and hold for five seconds, your count is now 10. By the time the cycle is repeated 10 times your count is 100. Don't raise the head.

3.



Start in the same position, now raise both knees at the same time, grasp behind the knees with both hands. Again pull them both as close to the chest as is comfortably possible. Hold for five seconds and return to the starting position. Take a breath and repeat. Ten repetitions brings you to a count of 50.

4.



Start with feet in same position but arms straight up and bent at the elbow and each hand grasping the opposite elbow. Hold the arms in this position and raise the upper torso as far as possible off the floor. Do not raise the feet off the floor. (You may not get very high which is O.K.) There is no hold for five seconds, but a brief hold is fine, then relax to the starting position with the arms still up and repeat 10 times. It is like a sit-up but you don't get all the way or even near it.

Now roll over on your stomach. While doing these exercises I find it very advantageous to turn the head from one side to the other with each five repetitions. It does wonders for the upper spine and neck and helps avoid the restricted motion which comes with most people as they get older and develop calcium deposits in the area.

5.

Laying flat on the floor head turned to one side and arms relaxed by your sides, lift left leg, keeping the knee straight until the foot is about 12 inches off the floor, hold for a second and lower the foot and repeat with the right foot and leg. This is one repetition. Do 10 of these.

6.

Laying flat and arms relaxed, try to raise the shoulder blades as though you were trying to make them touch behind your back (don't lift elbows). About like sticking your chest out. Hold for a moment and then relax. Repeat 10 times but when getting into this position do it slowly, not a jerk of the shoulders.

Continued on Next Page

EXERCISE ... Cont. From Page 39

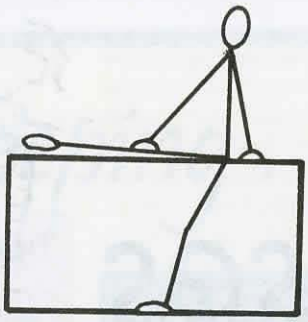
7.

Laying flat inhale and arch the back to raise the head and feet at the same time as far as possible, like the rocker on a rocking chair. Hold a moment, relax, and exhale. Do 10 repetitions.

8.

Still laying flat extend arms straight over head with fists on the floor. Raise one hand as far as possible keeping the elbows straight, then relax and raise the other hand. This is one repetition. Do 10 of these. The head will be straight forward for this one instead of to one side.

9.



This must be done on the edge of a desk, table, or counter. With right cheek of the bottom on the edge also have the right leg on the edge as well. Left foot on the floor. The right foot extends straight up, not rotated to either side. The right hand rests on the right knee and holds it down on the surface with out any pressure on the kneecaps. The left hand is on the surface behind you and enables you to sit up as far as possible. The back remains straight and as the left arm pushes you forward the muscles on the under side of the right leg become tight, but not to the point of being painful. You want to just have them tight but not in pain. Hold this position for 30 seconds and then reverse and do with the other leg. This then is one complete cycle or repetition. Do five repetitions. I think this is the most productive of the whole bunch.

That's it. Now go and have breakfast. You'll do better if you do this every day and you'll be less apt to develop real back problems. BC

Jim Higgins is a sideline beekeeper, apitherapist, and bad-back-avoider, who lives in Hillsboro, OH.

Bees At The Fair

Peter Sieling

I don't remember who suggested live bees for the honey exhibit at the Steuben County Fair in New York, the oldest continuous fair in the United States, but like a herd of lemmings, everyone in the Steuben County Honey Bee Association thought it was a great idea.

Dan, one of the oldest members, winked at the others and said, "I have an observation hive I used to take around to schools. But I can't spare any bees..." Everyone turned and looked at me.

I have avoided the Fair ever since I joined the club. The problem with fairs isn't the rides or the exhibits. It's just that once a year, hominid-like creatures crawl out from under rocks and caves to gather at fairs. I remember meeting an acquaintance, a biologist and staunch evolutionist at the Fair several years ago. We chatted about osmosis, mitochondria, deoxyribonucleic acid and things. Looking to my left I nudged him. "Look over there, Aldous Isn't that an *Australopithecus*?" He grunted. A couple minutes later I nudged him again, nodding to the right. "Look a *Cro-Magnon* and a *Pithecanthropus* walking arm in arm. What do you call the species in the stroller?" His ears turned bright red. A *Neanderthal* walked past chewing on two unlit cigars and cradling a giant stuffed Mickey Mouse.

"Excuse me," Aldous blurted and nearly ran down the midway. Last I heard from his mother, he had enrolled in seminary.

As I said, they were all looking at me. I knew what they were thinking. "You haven't volunteered to do anything for the Fair yet." Several even had the nerve to think to themselves, "You *are* head of the fair committee this year. You ought to do something besides assigning jobs to everyone else."

"Well," I said, wishing my ears would stop burning, "I suppose I could supply the bees." Dan graciously volunteered to let me pick up his observation hive at his place at my convenience.

Two days before the Fair I drove across the county to Dan's farm. The observation hive was a narrow box with Plexiglas sides and a removable cover, made to fit two frames of honeycomb. At home I opened my worst hive and caught the queen, then fished out a frame of comb. It wasn't easy getting the bee covered comb into the hive. The frame skewed and jammed as I pushed and shoved it into the hive. Pinched bees reacted by stinging. I finally shook the bees off the comb and forced it down with throbbing red thumbs.

You can't just scoop bees up and dump them into the narrow opening on top of an observation hive. I removed the old hive from its stand and replaced it with the observation hive. The field bees, returning with a load of nectar, had no choice but to enter. After a couple hours the observation hive was boiling with bees.

The next evening the club assembled at the fairgrounds to set up our display. On the way I noticed a bee buzzing against the inside of the car windshield. I brushed it toward an open window. Another appeared, then a third. At the fairgrounds, I found the agriculture building, set the hive on a table and removed the protective cover A

Continued on Next Page

FAIR ... Cont. From Pg. 41

dozen bees flew out as more squeezed out under the lid. I squashed it closed while someone searched for tape. Bees oozed out the other side. By the time the hive was secured it looked like a duct tape mummy. Bees buzzed against the florescent lights.

On the Fair's opening day our family left for a short vacation, returning just before my turn to manage the honey display booth. Back home, I pushed the answering machine message button. The first message was from the day we left. "This is Ralph, Steuben County Fair manager. I understand your !*%!&! bees are here. Come get them out of here! They're all over the place and nobody can go in the building!" Click.

How did he know who brought those bees? Someone from the Honey Bee Association squealed. I briefly considered moving to Canada. Instead, I did the right thing- the courageous, manly, ethical thing. I called Dan.

"Oh, I took care of it," he assured me. "I had some caulking along. Director come up to me, says, 'you get them bees outta here' I says, 'I'm not taking 'em out of here. You just cool down. I'll take care of them' I caulked 'er up. They ain't gettin' out now."

On Saturday I sat hunched behind the taped and caulked observation hive. Kids ran up and rubbed cotton candy fingers against the Plexiglas. Their mothers made horrified faces and moved quickly past as far from the hive as the aisle allowed.

A space alien stopped and gazed silently into the hive. Large metal ornaments dangled from various body parts. Through its hair you could make out tattoos of terrified women staring wide eyed as if crying, "Help, it's taking us back to its home planet. Save us!" It looked down at me with a crooked grin. "Uh oh gowag...aaaah cra!"

"Uh, yeah... Would you like a ticket for our 50/50 raffle and gift basket?"

"Ugowaq." He grabbed a pen and scrawled something out, stuffing it in the jar.

That afternoon I met people with "bee's nests" hanging in trees or in holes under their swing set. They seemed a little hurt when I suggested they were probably white faced hornets or yellow jackets. Nearly half the people who stopped said they were deathly allergic to bee stings. I met a surprising number of ex-beekeepers and descendants of beekeepers, confirming the USDA statistics beekeeping is a rapidly vanishing vocation.

By evening, the crowd thinned. I took the hive home and gently nudged the queen back into her colony, then shook out the workers and drones at the entrance.

In retrospect, an observation hive is interesting to beekeepers and children. It can be interesting and educational. But exposing the general public to live bees may not be the best way to promote honey. Cartoon bees and stuffed bears, bright sparkling jars of golden honey, beeswax candles and pretty wildflower pictures all contribute to selling honey. Scary bees don't. You don't sell beef by displaying a dead cow carcass hanging from hooks and you don't sell lumber by displaying big hairy loggers brandishing giant chainsaws at virgin redwoods.

Perhaps most important- whether they are *Homo sapiens*, *Neanderthal*, or lowland gorillas- if anyone gets stung, they all know how to speed dial their attorney on a cell phone. BC

Peter Sieling no longer scares the public with his wayward bees, in Bath, NY.

SAVING RUNTY COLONIES

James E. Tew

All bee stories don't have happy endings

In an ideal bee world, all hives would be strong and all nectar flows would be long, but even new beekeepers know this is not the case. Pesticide kills, defective queens, late season swarms, bee diseases or beekeeper mismanagements are some common reasons that runt colonies occur. Now that it's late summer, what should – or could – be done with these disappointing colonies?

Your options, and that of your beekeeper friends, are all over the spectrum. Select from the following common scenarios that best describe your situation.

I have other colonies that are doing well. This weak colony is not particularly important to me. I live in an area that has cold Winters.

Suggested solution After being certain that American foulbrood (AFB) is not the problem, combine the colony with another Unless there are extenuating circumstances, kill the runt hive queen. Build up your remaining healthy colonies and plan to make a split during the Spring of 2004 if you want to recover colony numbers.

I have other colonies that are doing well. Even so, I would like to try to save this colony. I live in an area that has very mild Winters.

Suggested solution Again, after checking for AFB, add bees and brood from another colony to the weakened hive. Keep your expectations in check. Feed the colony as much as it will take and be sure that other problems, such as predaceous mites, are under control. Re-evaluate during late September or early November. If the treated colony looks as though it will make it through the Winter, let it try. If the recovery was not particularly impressive, combine the colony with another hive and make a split during the upcoming Spring.

I'm somewhat new to beekeeping. I don't have a lot of other hive resources and I don't have a lot of experience.

Suggested solution Honestly, this small colony does not have a bright future. Probably the colony will die even during a mild Winter. That means that there is no harm in trying to save the unit, but you don't have much to work with. All you can do is feed the colony both supplemental carbohydrates and pollen substitutes and hope that the colony has enough time and strength to utilize the extra resources. Obviously, it would have been helpful to be able to add both bees and brood to this weakened unit, but sometimes that is just not an option.

I hope that such a new beekeeper can maintain his or her new energy through the upcoming Winter and be prepared to start again. Even before there were predaceous mites in our bee lives, beekeepers could not keep all colonies alive all the time. Sometimes, some colonies just don't thrive.

I'm somewhat new to beekeeping, but I have some other hives from which I could take brood and bees. I don't have a lot of experience doing this type of management.

Suggested solution Ironically, I am not sure I would bother the healthy hives with efforts to save one that is not happy. Being new to beekeeping, you were probably lucky to have some hives that are doing well and I would be fearful that tinkering with the weak one might do too much harm to the good ones. I suppose that I am suggesting that until you have more experience, accept your losses. But a lot of you are not going to want to do that. If that describes your feelings, go up to some of my other previous suggestions and select ones that offer ways to help ailing colonies. There is no real right or wrong. Do the best you can. Sometimes you win, sometimes you lose – experienced beekeeper or not.

ALL of my colonies are remarkably weak. How can I pump them up during late Summer?

Suggested solutions Be sure American foulbrood is not your problem. Pesticides, skunks, storm damage, poor queens, beekeeper mismanagement, and bad weather are all common reasons that bee hives decline. If your climate is temperate and you have the time, equipment, and experience, try feeding them. Then hope for the best during up coming Winter.

Another variation would be feed the strongest of the lot and combine the weakest of your operation with others. You would then hope to get this strengthened, albeit reduced, number through the Winter. How many you combine and how many you try to feed will have to be your decision. An important consideration is that hive numbers are not wildly important. You are much better of to Winter four strong colonies than to Winter 10 weak ones – even if you are keeping bees in a warm climate.

Continued on Next Page

RUNTY ... Cont. From Pg. 43

The Beekeeper's Medicine Bag

I have made reference to feeding, combining and otherwise helping your colonies. Those procedures may not be familiar to some of you. Your medicine bag will become increasingly important to you as your beekeeping project grows.

From the Medicine Bag - Adding adult bees and brood

This is essentially a learned art. How many is enough and how many is not enough is a perpetual question with many variables.

1. Don't: Add more capped brood than the adults can keep warm.
2. Don't: Add more open brood than the adults can feed.
3. Don't add so many adults that the colony queen is attacked by the new bees.
4. Don't add adult bees to a nearby colony without expecting many of the added bees to return to their original colony.
5. Don't: Give very much uncapped brood.
6. Don't: Be impatient. The colony will not rebound overnight. (See #5 below.)

1. Do: Consider your season of the year (Is going stay warm or quickly become cold?)
2. Do: Use a liberal amount of smoke when adding adult bees to another colony.
3. Do: Re-cage the queen if you have any concerns about her safety.
4. Do: Restrict the weak colony's entrance if robbing is a potential problem.
5. Do: Be patient. The colony will not rebound overnight. In fact, it may not rebound at all.

If you are adding bees and brood to augment a lagging population, probably adding about 1/3 of the bees and 1/3 of the capped brood to the weakened colony from other stronger colonies is the most you should add. You can mix bees and brood from different colonies if you use smoke and protect the queen. Expect many of the added bees to return to the original colony if you don't move the supplemented colony about 1-2 miles away.

Importantly, be realistic as well as patient. It the colony is greatly weakened and you are going to have to add significant amounts of adults and brood and frequently feed, it will probably not be worth the effort. Having said that, for learning or experimenting, then have a go at it. Don't forget – be realistic and patient.

Feeding weakened colonies

Carbohydrates Many different models of feeders have been on the bee market in the past and are on the market now. Though all work, to one degree or another, I would probably use a top feeder to supplement a weak colony. The feed is near to the nest and reasonably convenient. Feed thick syrup, not a thin mixture made up with cold water. Corn syrup (HFCS 55 or 42), purchased from bee supply outlets, works well also. If you commit to helping a weakened colony, stay with the assignment. If you don't feel that you can make the time commitment, I suggest combining the colony rather than parasitizing a good colony to give to a weak colony. I'm afraid that you will end up with one dead weak colony and one strong colony that has become weakened. Feed until the needful colony no longer takes the feed. It may be well into Winter. Obviously, frames of honey from healthy colonies, rather than get extracted, can be used to feed also. Consider the economics of the cost of honey compared to sugar.

Pollen supplements I suppose that I would feed pollen supplements if I had the product. I don't think I would recommend purchasing this product just to feed a weakened colony. But if you do, attractiveness (and value) are directly proportional to cost. Do you need a 50 pound bag? Can a dozen patties do a better job? Probably. If there is any natural pollen, I suspect the bees would prefer to collect from those sources. But some colonies are eager for the supplement and will take it right down. If you have some left over from your Spring feeding, try it in the Fall.

With either carbohydrates or with pollen supplements, you should expect individual colonies to act differently. It appears that some colonies never figure out the feeding procedure while others are on the feeder immediately. Feed those that will take it and don't waste your time on those that won't.

Diseases and pests

Unfortunately, beehives get sick from an unsettlingly long list of possible problems. Some diseases, like mites and the foulbroods, you can help with but with others – especially virus infections, you can't do anything, but hope. If you don't have a mite problem and if you don't have any symptoms of American foulbrood, most other diseases can't be helped. Ironically, if you diagnose a disease in your weak colony, I would immediately check my other colonies that I had categorized as strong. Don't spread disease.

If after adult bee and brood analysis, you suspect a problem with something other than mites or AFB; I don't think I would start the supplemental assistance program. The hive is already weak. You suspect a disease is present and the weather will soon be getting bad. Doesn't look good for this unit – right? Cut your losses.

Combining colonies

If the weak colony is otherwise healthy and you have decided not to supplement the unit, uniting the weak colony with another is the logical way to go.

Newspaper technique. The newspaper uniting method is by far the most common.

1. Open your hive that will be *receiving* the weak colony.
2. Cover the exposed frames with a single sheet of newspaper. Cutting a clean slit for a couple of inches between frames with your hive tool, or punching a few small holes may help speed things along.
3. Put the weaker unit *up top* so the newspaper is all that separates the two units.
4. You can select the queen you wish to head the combined colony, but generally the queen from the stronger hive is allowed to reign. You don't necessarily have to do anything about selecting a queen. The bees will decide which queen better suits their needs.

Massive chaos combining method

You won't find that name in any bee book. I made it up for this discussion. Essentially, in the chaotic combining method you shake all the bees from both units in front of the hive that will house the combined units. Smoke the combined mass of bees. Maybe try one of those herbal/essential oil sprays. Bees are flying and crawling everywhere. Ideally there is brood in the empty hive which will attract the bees into the hive. Cage the queen that you want to use to head the colony and position her within the hive. Continue to gently smoke the bees into the direction of the hive's entrance. It is this confusion that causes the bees to combine. By the time they settle down and reorganize themselves, they will have accepted each other. If you were not using a candy plug in the queen cage (but rather a cork or wood plug), return two to three days later and release your caged queen.

Small hives are here to stay.

I began this piece saying that, "In an ideal world, all hives would be strong and all nectar flows would be long." As a beekeeper, you will need to learn to assist small hives and learn when your help will be fruitless. Save those you can, but eliminate the ones you can't.

There's an old beekeeping axiom: "Take your losses in the Fall;" and I might add: "And you won't have as many in Spring." BC

Dr. James E. Tew, State Specialist, Beekeeping, The Ohio State University, Wooster, OH 44691, 330.263.3684, Tew.1@osu.edu; www2.oardc.ohio-state.edu/agnic/bee/; www2.oardc.ohio-state.edu/beelab/

KEEP IT CLEAN

Just About Everything In Beekeeping Is Sticky

Ann Harman

Beekeeping is a gloriously sticky hobby – or business. Honey is sticky; so is propolis, beeswax and smoker goo. Hands, clothes, hive tools, doorknobs and telephones get sticky. At some point everything has to be cleaned up or everything would end up all stuck together. The bees seem to be able to cope with sticky much better than we can. I wish they would tell us their secret. In the meantime we will just have to clean things up as best we can.

It is nice that veils come with a very long cord. But sometimes that cord is just too long. It manages to get in the way as we light our smoker, open the hive, pull out a frame, remove a full honey super. Most of us just keep flipping it out of the way and muttering. As we go to put the veil on the next time we find that the cord is a sticky mess. Well, stop for a minute. See what needs to be cut off. Tie a knot in each end so the cord does not ravel and cut the surplus off. Quick, simple. It's anyone's guess why we didn't do that sooner But wait – what's left is still sticky. The only way I have found to clean up veil cords is to run very hot water over them. Try that when you remove your veil and see the improvement.

Coveralls or other clothes reserved for bee yard work should really be laundered after each use. There are too many cases of the beekeeper's family members becoming allergic to bee venom from the dried venom clinging to coveralls Dried venom flakes off clothing and, being lightweight, floats around in the air. There it can be inhaled and absorbed through the mucus membranes. That means that the person handling the coveralls is receiving very small doses of bee venom – an ideal situation for development of allergy to venom. Launder coveralls and shirts and pants worn for apiary visits. Launder at the end of the day. OK – so you washed them last night. Wash them again. Tonight. You do it. Don't hand them to someone else.

Allergy to dried bee venom is real and can be serious. You may not feel the sting on the back of the coveralls. Just assume some bees deposited some venom on the cloth. Bees can withdraw their stingers from some fabrics, so lack of left-behind stingers gives no information about deposited venom.

Gloves are a real problem. The ones with leather get really sticky with honey, wax, propolis, dust, dirt and sweat. Those gloves are strong and tough, however. Try rubbing alcohol and some paper towels. You will get much of the goo off but not all. When you get tired of thick leather gloves, you might want to try some of the yellow dishwashing gloves. They are used in Africanized bee country and work very well. (I have used them there.) These also can be cleaned off with alcohol. One great advantage is they are cheap and can be cheerfully thrown away when they get really messy. Yes, there is a disadvantage – your hands sweat inside of them and the sweat does not evaporate so you end up with puddles inside each finger. Now when you think you can't win them all, try going without gloves.

Great! Now we've got sticky fingers. The little packets of hand wipes work wonders on fingers covered with propolis. Keep lots of them on hand in your bee truck and in your bee bucket. Those wipes really help keep your steering wheel and telephone clean. If you have been wise about working in the heat you may have a bucket of water handy. Use one of those nice 5-gallon plastic buckets with a screw top. Now you have a supply of water both to keep you cool and to wash sticky honey off your fingers.

The hive tool really takes the brunt of hive work. It digs into propolis, scrapes wax, pries up heavy box edges that are well stuck together, and does many other tasks without complaining. And it does get gummed up. Many beekeepers worry that diseases can be spread from the accumulations on the hive tools. Although the risks may be minimal, a hive tool works much better when it is clean. If you have very sandy, loose soil, while you work the hive tool can be stuck in the ground several times to scrape off the lumps.

Many beekeepers stick the hive tool inside the lit smoker and roast it well. It is perhaps best to scrape off lumps before giving the heat treatment. Just be careful of your fingers when retrieving the tool from the smoker. It is handy to have two hive tools. You can use one to scrape lumps from the other. If no objections are raised, the dishwasher is a great place to clean a hive tool. After all, wax, honey and propolis are edible. Soap saturated steel wool pads work well, too (Brillo®), both cleaning and sanitizing. Keep a one gallon bucket of water with a lid (an old feeder pail) on the truck just for this, along with a box of pads.

Continued on Next Page

"We produce food. Always keep that in mind."

The smoker. The wooden back gets nicely gummed up, doesn't it? And the top does not fit too well with all the creosote. Some beekeepers use a plastic bag over the wooden back and discard the bag frequently. This does help keep the wood cleaner. If you are buying a new smoker because you ran over the old one with your truck, you may wish to give the wood a good coat of exterior glossy urethane varnish. You may well have a little bit left from some other task. This will give you a smoother surface that can be cleaned easier than bare wood. In the meantime scrape lumps off and use some very fine sandpaper to remove some of the goop.

The heavy buildup of creosote inside the top can usually be scraped off. I do know one beekeeper who used brake cleaner to clean around the rim and the inside of the top. It is important to remove the brake cleaner before lighting the smoker! Creosote is difficult to remove since it is not easily dissolved by cleaners. Somewhat coarse steel wool can be used to remove some of the buildup.

Now we come to the bee yard. Is yours full of rocks and holes, sticks to stumble over? A piece of rotten equipment? Are weeds taking over? The best time for bee yard cleanup is in the autumn as everything is dying down and bee work is almost over for the year. An autumn cleanup will give you an almost fresh start in the spring, a busy bee time of year. Yes, you can use a weedeater to trim weeds and grass. You can use a mower in the evening when most bees have gone to bed for the night. Whether weedeater or mower, aim the discharge away from the hive entrance. You might want to wear a veil. A weed killer, such as Roundup® can be used with bees. Use it wisely – in the evening and don't spray the hive, just the grass and weeds. By morning the plant will have absorbed the weed killer.

Some beekeepers use an assortment of things in front of the hive as a "mulch" to keep down weeds. I have seen pieces of carpet, roof shingles, plywood scraps, discarded hive parts, plastic sheeting and even slabs of discontinued wallpaper sample books. All these are fine as long as you are not tripping over them. A stumble with a heavy honey-filled super is not good. A few minutes work each visit to the bee yard can go a long way to having a good work environment. By the way, saw off those tree limbs that swat you in the ear as you inspect your hives.

Get your hive tool ready because we are going to open a hive. Did you remember to bring your little wax bucket for wax scraps? There is always one colony that dedicates itself to interior decoration with great clumps of burr comb. Scrape off and save that wax. You will surprised how much wax you can accumulate during the beekeeping season. Get in the habit of keeping the rabbet clean of propolis. In areas where bees collect much propolis you will need a little propolis bucket along with your wax scrap bucket. This propolis will not be top grade because it may have wood splinters or some bee parts stuck in it. But it can be sold. See what you have at the end of the beekeeping season.

One piece of equipment that usually needs cleaning is the bottom board. Bees work hard but they do miss some things. A clean bottom board is a dry bottom board. The bees need it to be dry. Dampness leads to problems of mold, possibly disease. Now if you are using the new screened bottom boards you will find that the hive debris falls through and now the bees have an automatically clean environment. Or maybe not, if the screen is too fine. Check and see once in awhile.

Remember that piece of drone comb with pupae that you tried to scrape off some top bars? The one that just flipped off onto the ground somewhere? Well, you just stepped in it. Now it is firmly attached to the bottom of your work boot, along with some grass bits and grit. Wonderful. Something has to be done. You have many choices but only a few are going to work. You know perfectly well that walking inside the house and leaving a trail of goo is not going to work. Yes, you can leave your boots on the back steps – where the neighbor's dog decides a smelly old boot is a nice toy. You can try driving your bee truck home but you'll find part of that dirty wax now stuck to your brake pedal. Along with hive tool, hand wipes, queen cages, and pencil, your bee bucket should contain some rubbing alcohol. Sit down on a hive, take off boot, pry off as much of the goo as possible with hive tool (please don't dump it back on the ground by a hive to be stepped on again) and wipe the sole with some alcohol. You can remove quite a bit and can certainly clean up the boot enough to wear home.

Your honey house may be part of the garage or kitchen or it may be a building, large or small, built to be a honey house. In those areas infested by the Small Hive Beetle (SHB), beekeepers have already found that a clean honey house is the only way to save equipment. Your honey house should be clean. You are producing a food product. Look around and see where you can minimize dust. A cement floor can be a big source of dust. Today we have excellent concrete coatings that make such a floor easy to clean and one that stays dust-free. Anything that comes in contact with honey should be well washed with hot water. Do not use any old kind of axle grease on the extractor gears. If you need to grease them use the food-grade lubricant that is sold by bee equipment suppliers.

From start to finish a beekeeping operation should be clean. It is difficult when coping with sticky honey and propolis and with beeswax and with the apiary. But efforts should be made so that we can be proud of a clean food product. BC

Ann Harman makes keeping it clean look easy from her home in Flint Hill, VA.

Past Pieces

Hot Fires and Cold Smoke

Wyatt Mangum

In the previous article, we learned about the first smoker A. I. Root invented in 1877, and modifications made to it in the following year. We even saw one in mint condition, now a treasured piece of our beekeeping history. This particular version of his smoker would not last for long. More changes were quick to come.

In 1879, we find Root still not completely satisfied with his Simplicity smoker. His February article, in the *Gleanings in Bee Culture*, proudly began with, "You see, I have invented another smoker." A diagram showed his latest creation (see Figure 1). With his earlier smoker, as with the Quinby and Bingham smokers of the time, the funnel had to be removed to refuel it. And of course if hot, fingers were easily burned. Root wanted a fast and safe way to refuel his smoker. Interestingly this version of the Simplicity did not open as one would expect, with the funnel hinged to the firebox, more akin to the modern smoker. But rather, he hinged the firebox to the bellows. To reload the smoker, first it was inverted so the funnel pointed downward. A latch released the bellows, and they were flipped over exposing the blast hole in the bottom of the firebox. The smoker was reloaded through this hole, quite clever given the starting design. In addition, a tube (sometimes called a blast tube) was fixed to the bellows and capped by a piece of perforated metal (essentially forming the grate). This tube injected air into the firebox with the following critical feature. The tube actually extended a little into the firebox when the bellows closed back over the blast hole. This feature not only helped the smoker's performance, but also tried to avoid another looming problem.

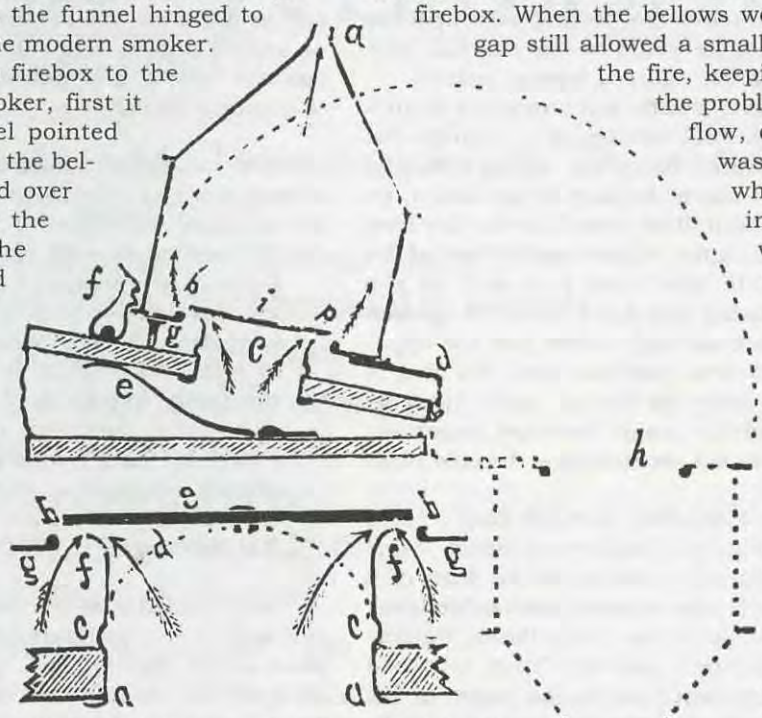


Figure 1. A diagram of Root's modified Simplicity smoker, seen in two positions: closed up ready for use and with the funnel and firebox flipped over ready for refueling (the dotted lines).

Bingham, who had a patent on his smoker, had visited Root. Root gave an account of their meeting a month earlier in the January issue of his *Gleanings in Bee Culture*. The meeting concerned possible patent infringements, usually a contentious topic among inventors. However their conversations remained a cordial but candid exchange of viewpoints. Remember that the Quinby smoker had a solid pipe connecting the firebox and bellows. This arrangement did not allow for a small draft of air thorough the fire between bouts of smoking. Consequently the fire soon died when the smoker was temporarily not in use. The Simplicity design did not include a connecting pipe, leaving only a small gap for the air to blow across from the bellows to firebox. When the bellows were not pumped, the gap still allowed a small draft of air through the fire, keeping it lit. Now here's the problem. This passive airflow, or direct draft as it was called, is precisely what Bingham claimed in his patent, somewhat to Root's dismay. "This blowing the fire from a little distance, instead of putting the bellows' nose right into the fire, he claims as his invention. I should not think of patenting such an invention, but he thinks otherwise."

Though not completely agreeing with Bingham, and not sure of the proper course of action, by the next morning, Root re-

Continued on Next Page

solved that, "... I would give way ... I would, in accordance with his wishes, make no more smokers embodying that principle ...." Continuing on he further confided to his readers, "I did the best I knew how, erring on the side that harmed *me* [his emphasis] most, if anything." As we will see taking the readers of the *Gleanings in Bee Culture* into his confidence, as well as showing them how to build his smoker, would become a huge asset.

Following the description of his modified Simplicity shown in Figure 1, Root explained, "Of course, I thought, while making it of my promise to friend Bingham, but as I had put the blast tube clear inside of the fire pot, I thought it entirely clear of his claim." Mr. Root's foreman and another skilled employee said, however, the modified smoker still relied on the direct draft principle to keep the fire lit.

After wrestling with this possibility of patent infringement, a complicated dilemma to be sure, Root resolved to let, of all people, his competitor, Bingham decide the matter. "If my friend Bingham thinks the smoker given above does not infringe on his invention, I will make them for 50 cents each by the half dozen this season. If he thinks it does, *I will not make them at all* [his emphasis]." In a time when patent disputes were fairly common, such a decision had to be most unusual.

Consider further the gravity of that decision. If Bingham decided against Root, he would be out of the smoker market (at least for a while). Furthermore that would leave beekeepers with essentially a higher priced smoker. Bingham smokers started at $1.00 and went up for larger sizes, though the smallest size by the half dozen was 50 cents each. On the surface, Root's situation was most unenviable, letting a competitor decide your fate, hoping he would be fair and just, and not give way to the darker sides of human nature.

Yet on a deeper level, subtle but important factors were coming into play. Root was trying to improve his smoker, making it safer to refuel while avoiding Bingham's direct draft claim. As part of his design, he extended the blast tube a little ways into the fire box, hoping to achieve both aims. Unfortunately two of his trusted employees still considered it to rely on the direct draft claim, causing him much worry. It seemed Root was at a real disadvantage; rather just the opposite was true. His concern, combined with his idea of letting the blast tube enter the firebox, made him perfectly prepared to quickly grasp the next important development in bee smoker technology – the cold blast principle.

Amazingly, as Root recalled, perhaps only a mere 15 minutes after making his fatalistic decision, came an abrupt turn of events, unfolding in the form of a letter handed to him. It was a most remarkable letter indeed, coming all the way from Santa Paula, California, written by a beekeeper, John G. Corey, who had followed Root's smoker problems in the pages of his bee paper. The letter not only stated the smoker problem concisely but also proceeded to offer a solution. A solution that remarkably built precisely upon the idea of having the blast tube enter the firebox, and in the process, also freed Root from his patent problem. After some opening comments, the letter stated,

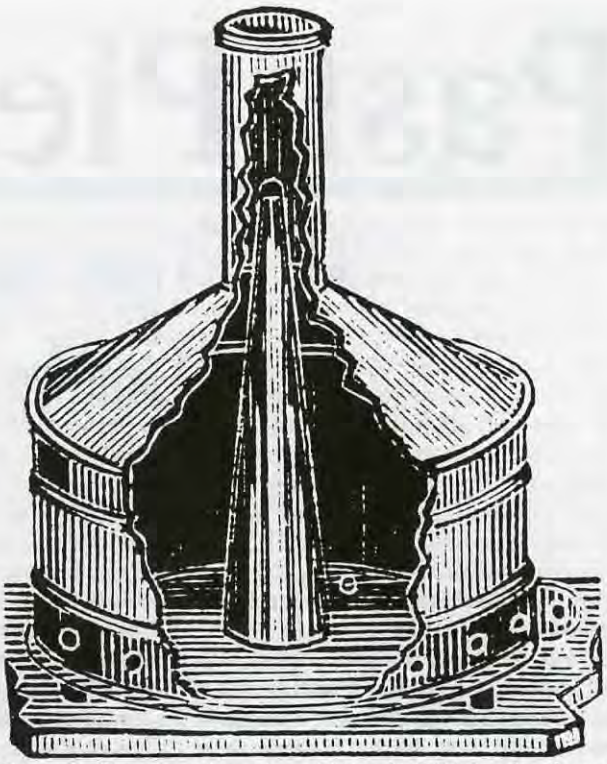


Figure 2: The original version of Corey's Cold Smoker from a sample sent by him to Root. Note the resemblance to the Simplicity. However the blast tube extended through the fuel almost to a small tube extension on the funnel. Air holes in a rotating metal ring around the base of the smoker worked like an adjustable damper.

"All smokers made on the principle of blowing a blast of air through the chamber containing the fuel are defective for this reason: the fuel is made to burn up rapidly and, worst of all, the smoke is hot, and who has not noticed how hot smoke irritates bees instead of quieting them?"

After using the Root simplicity smoker (which was a hot blast) and acknowledging its merits, Corey posed his solution (see Figure 2).

> "Instead of blowing my fuel when it was already burning fast enough, I concluded to blow my blast up through the fuel in a solid tube, ending far enough up in the spout (which I added to the top of your fuel case) to create a vacuum, and cause the smoke to rush in to fill this vacuum, and in so doing mix itself with the blast of cool air, thus giving me *cold smoke* [his emphasis]. I then arranged a damper so as to regulate the draft to suit my fuel, and *Corey's Cold Smoker* was completed [his emphasis]."

As an added benefit, Corey explained, "This vacuum principle is not any part of Bingham's *blow hard, hot blast, direct draft principle* [his emphasis] and you are at liberty to use my improvement to your heart's content without cost." And lastly, he included a post script, "P.S. – If this gets you out of the smoker difficulty, I will be fully rewarded."

While the timing and content of Corey's letter was

most fortunate for Root, remember he shared his successes and problems with his readers, who in turn offered their ideas and solutions. This exchange of ideas resulted in a fruitful dialogue through the medium of the *Gleanings in Bee Culture*. Furthermore Root had just designed a smoker with the blast tube entering a little ways into the firebox, so now extending it still further up into the funnel should not seem so unusual. This design also provided cooler smoke, better conservation of fuel, and probably best of all, no patent problems.

Not surprisingly, Mr Root quickly adopted these ideas. Following the publication of Corey's letter in the February issue, he acknowledged, "Friend Corey in the name of bee-keepers of the land, I thank you for your kind and generous gift." True to his inventive nature, however, Root saw room for improvement in Corey's smoker. Since the funnel needed to be removed for refueling, the threat of burned fingers still remained, and he thought the damper could be simplified (to help keep the cost down). So he set to work to solve these problems.

As far as I can determine, the Simplicity smoker shown here and this original Corey smoker probably only existed as prototypes since subsequent changes occurred so rapidly and other versions went into production. Regrettably, the originals probably did not survive, though the collector in me cannot stop hoping to find one. (Yes, I know it's a long shot, but in collecting rare smokers, most everything is a long shot.)

In the next article, we will see how Root changes Corey's smoker and examine some of those smokers from that time period. A friend of mine even made an exact copy of one, following Root's instructions. We'll even fire up that one and use it. BC

Acknowledgments

The author thanks Suzanne Sumner for her comments on the manuscript.

Dr. Wyatt A. Mangum is a honey bee scientist, life-long beekeeper and part-time mathematics instructor at Mary Washington College, Fredericksburg, Virginia 22401-5358, wmangum@mwc.edu

2 QUEENER w/DIFFERENCE

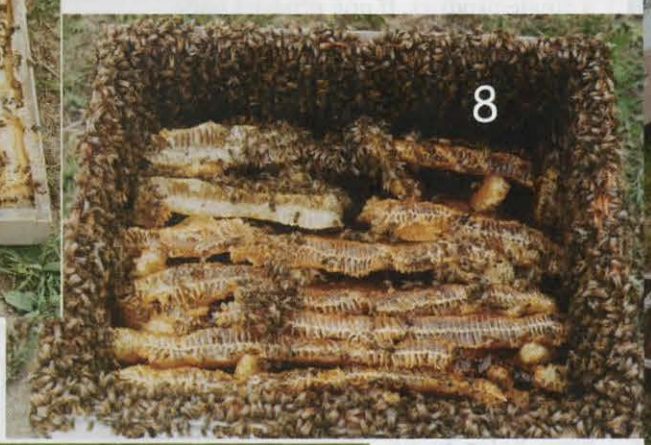
Roy Hendrickson

The two single hive body colonies pictured were being run for cut comb honey. My standard practice with this type of colony is to clip and mark the queen as part of my swarm control plan. On subsequent visits I check for and remove any swarm cells present. Once the honey flow is well underway and the bees are working in the comb honey supers, the chances of swarming greatly diminish. The colonies are then operated similar to extracted production colonies. However, in certain years as the colonies increase in strength prior to the flow the threat of swarming can become quite pronounced. Should I miss a cell on my weekly inspection a swarm will issue within a couple of days, weather permitting. By clipping the queen's wing she is prevented from joining any swarm. Being unable to fly she will fall to the ground and be left. At least that's how it's supposed to work. On occasion the queen will crawl under the bottom board with some of the bees from the returning queenless swarm. If conditions are favorable the colony under the bottom board will grow and prosper. The adjoining pictures show such a colony. The colony on the right (1) swarmed in late May due to extremely poor Spring weather conditions. I left a cell, which emerged in due course. The colony became queenright and eventually produced a nice crop. I failed to notice the colony under the bottom board. The weather turned hot in mid June. The honey flow which had started slowly increased due to the warm weather, and the comb honey colonies started to cluster outside the entrance. Again I failed to notice the bottom board colony! When the outside cluster on this particular colony reached the back of the bottom board (2) I became suspicious. A little smoke and a hive tool under the bottom board confirmed my suspicions. A two-queen colony!

The bottom board colony continued to grow and reached its peak in early August. It completely occupied the cavity under the parent colony (3) and was starting to climb the outside hive body wall (4) between the two colonies. It also expanded outside of the hive stand cross member and was starting to draw comb directly below the parent colony entrance. For a while I was in doubt about which colony was the strongest. I'm sure they were sharing the same field force (5).

Due to the excessive Summer heat I delayed transferring the bottom colony until late September. By then the population had decreased significantly. The transfer consisted of removing the upper colonies to another hive stand in front of the original. That left only the bottom board colony on the original stand. The

bottom board was separated from the hive stand and turned upside down to expose the combs (6). The combs were carefully cut away and placed on a new bottom board on the original hive location (7). An empty Illinois super served as the bottom hive body. The transferred combs were resting on the bottom board separated by pieces of empty comb (8). All of the miscellaneous bees were either shared or brushed onto the transferred comb. With the transfer complete a second Illinois super with empty combs was placed above the transferred colony and the original colony placed on top of the stack (9). The bottom board colony queen, clipped and marked was removed during transfer. The two colonies united peacefully. The lower transferred combs were robbed out by the united colony bees and were removed a couple of weeks later. The united colony required light feeding before being moved to a Winter location in late October. BC



Roy Hendrickson keeps bees in all sorts of places around his home in Chardon, Ohio.

INNER ... Cont. From Pg. 8

make it an attractive buy for one of those expanding, and an easier sell for someone thinking more about visiting the family than hiring family.

It's also the time to experiment. When you don't have to put all your eggs in, you can, perhaps, afford to lose a few. An educational and financial investment if you will.

How are your accounting skills? Maybe Spanish for better communication? Just two thoughts.

Maybe expanding should be looked at another way. Without getting bigger, what about expanding your product line? Instead of just honey what about nucs, or queens, pollination, comb honey, propolis, queen cells, or even packages. Different skills, labor and equipment, certainly, but it's also spreading out your risk.

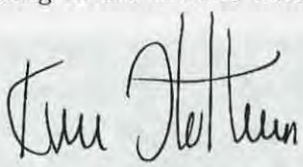
What about expanding your retail line – different sizes, shapes, colors, honeystix, candles, beeswax, whatever – these products will expand your exposure, and at the same time reduce your reliance on a single product. If one product bails at a particular market or for a particular customer, the others will fill in and soften the blow...again, reducing and spreading out your risk.

If you're a hobby or sideliner, how can you cash in on this bubble? Well, for starters, really, really consider your prices – what are you selling your product for? I'll bet you can raise prices just a bit to improve your bottom line. I'll also bet now's a good time to look for a few new outlets – the honey business has been hard lately and some stores have holes to fill, this is one new customer. Now's the time to try a couple of new sizes, competitively priced, to get your foot in the door of these places.

Some of us will keep doing what we've been doing, but pay off those nagging debts by accelerating pay back time and saving interest costs. Some will replace that 40 year old extractor or uncapper with a similar-sized model – just without the duct tape and finicky off switch. And some won't pay any attention at all to any of this.

Bottom line here is that maybe honey prices will stay in the good-profit range, and we'll all live happily ever after. If they do, and you have made plans to save money, to upgrade and become more efficient, to reduce and spread out you risk, or decrease your liability exposure by having a smaller, tighter-run operation, by increasing those skills you need most, by having more options for products to sell, and more buyers to purchase them, by knowing your costs and aiming for the most competitive and profitable price....well, if we all don't live happily ever after because the prices do change...at least you will be prepared.

Let's not repeat the dot.com disaster. Learn from their mistakes and blunders, blindness and greed. Take careful advantage of these best of times by fixing what's broke and adding future income insurance.



BOTTOM ... Cont. From Pg. 64

of lost hive tools, extinguished smokers and empty feeding pails. Who is to say that those primitive beekeeping cave drawings aren't just records of ancient spousal bickering. Who knows, maybe even some good can come out of this arrangement.

Really, aren't the Russian hygienic queens the product of one half of a beekeeping couple who came to the same conclusion that I did? Maybe it was "Vladimir" who, after running over a hive tool with the lawn mower for the umpteenth time simply declared that he had enough and moved his hives to some distant locale in Siberia where his wife could no longer hound him about the merits of plastic foundation. It could be that were it not for Vladimir and his doting wife (who, I should add, was really looking out for his best interests) we might not have this hope for mite resistant colonies after all. Perhaps our solution is not so extreme. Perhaps some day our divided apiary will yield some greater good. I know it's already saved one marriage.

?DO YOU KNOW?

Summer Management

Clarence Collison
Mississippi State University

The primary purpose of Summer management is to insure that the bees have adequate space for brood production and honey storage. In addition to insuring that adequate space is available for the bees, you should also check on the overall condition of the colony and conditions which might affect it. Inspections for disease and mites plus the condition of the brood area (performance of the queen), should be considered when you have the colony open. Summer is also a time when pesticide problems may occur. Other potential problems could result from attacks from skunks, bears, ants, wax moth etc. Specialized management will also be required if you are producing products such as comb honey, and pollen. Beekeepers also need to be concerned with honey quality and the factors that can negatively impact it.

How well do you understand Summer management and potential problems that can affect colony performance and honey quality. Please take a few minutes and answer the following questions to determine how well you understand these important topics.

The first nine questions are true or false. Place a T in front of the statement if entirely true and F if any part of the statement is incorrect. Each question is worth 1 point, unless otherwise indicated.

1. ____ Honey produced in old, dark comb is usually darker in color, and brood reared in old combs results in smaller bees.
2. ____ Propolis within the hive is beneficial to bees because it contains antimicrobial chemicals called terpenes.
3. ____ During a major honey flow the beekeeper will see many guard bees at the entrance of the hive.
4. ____ Hives being visited by skunks frequently become extremely aggressive and difficult for the beekeeper to manipulate without incurring numerous stings.
5. ____ Adult bees normally detect and remove diseased larvae very quickly.
6. ____ Larvae affected with sacbrood appear normal until after they are sealed in their cells.
7 ____ American foulbrood in a colony is an indication of poor colony management.
8. ____ Newly emerged small hive beetle adults are strong fliers, so may be attracted to colonies in uninfested apiaries.
9. ____ Minimizing the use of smoke is important when attempting to find the queen.

Most honey bee diseases and pests affect either the brood or adult honey bees. Please indicate which stage(s) are affected by the following diseases and enemies. (9 points)

A. Adults only
B. Larvae only
C. Both adults and larvae
D. Adults, larvae and pupae
E. Eggs, larvae, pupae and adults

10. ____ *Varroa* mite
11. ____ Honey bee tracheal mite
12. ____ American foulbrood
13. ____ Nosema disease
14. ____ European foulbrood
15. ____ Paralysis
16. ____ Chalkbrood
17 ____ Sacbrood
18. ____ Skunks

19. In the production of section comb honey, why is it important to: (3 points)
    A. Use young queens
    B. Having an abundance of empty comb in the brood nest.
    C. Use a bait section in the first comb honey section super.
20. What is the most common symptom of bee poisoning usually observed by the beekeeper? (1 point)
21. Name two diseases/maladies of honey bees that are diagnosed by dissecting adult honey bees. (2 points)
22. Please explain why it is important for a person to remove a sting as soon as they can, after being stung by a honey bee. (1 point)

ANSWERS ON NEXT PAGE

?Do You Know? Answers

1. **True** Beekeepers usually prefer to retain old combs within their hives for many years as opposed to replacing them. The process of comb building and conversion of honey into wax, is believed to significantly reduce honey production. The production of honey in old, dark comb, however, is usually darker in color and the adult bees may be smaller in size due to the buildup of pupal cocoons within the cell.
2. **True** Propolis is a mixture of plant resins, beeswax and hive debris. Worker bees use some kind of solvent, probably glandular in origin, to mix these materials into the familiar brown, sticky substance commonly seen within the hive. While large amounts of propolis is considered to be objectionable, it is likely highly beneficial to bees because it contains antimicrobial compounds called terpenes. Terpenes such as pinene, limonene and geraniol are well known bacteriocides, fungicides and miticides.
3. **False** Colonies are less aggressive when there is a good honey flow underway in the field, possibly because many of the older bees are out foraging. The total number of guard bees found at the colony entrance is related to the amount of forage that is available. The number of guards decrease when the amount of nectar and/or pollen are abundant and increase with a nectar dearth.
4. **True** In addition to rapidly depleting the bee population, skunks make a colony very aggressive and mean since they usually return night after night.
5. **True** Brood that dies in the comb for any reason is normally removed very quickly, if the house bees are able. This hygienic behavior is important in maintaining a healthy environment within the hive.
6. **True** Sacbrood virus multiplies in several body tissues of young larvae but they continue to appear normal until after they are sealed in their cells. Then they are unable to shed their last larval skin, because the thick tough endocuticle (inner skin layer) remains undissolved, and they die.
7. **False** The presence of American foulbrood in a colony is not a direct indication of poor colony management. In fact strong, well managed colonies have a greater chance of picking up the disease than weak colonies since they have a large field force. As the infection weakens a colony, the colony can no longer defend itself against robbers from strong colonies in the area. The first line of defense in protecting colonies is the ability to detect and recognize the early symptoms of American foulbrood. Failure to detect or recognize the disease would be the only way one could be accused of poor management.
8. **True** Most small hive beetle adults emerge after three to four weeks in the ground. Newly emerged beetles are quite active and take flight readily looking for a host colony.
9. **True** When searching for a queen in a colony it is important to disturb the colony as little as possible and smoke should be used sparingly. Under normal circumstances the queen is found in the brood nest, surrounded by her court and perhaps laying eggs. When excessive amounts of smoke are used, the bees including the queen are repelled and the queen often runs from the brood nest. Often they hide within masses of bees in the corner or on the sides of the colony.
10. D) Adults, larvae and pupae (*Varroa* mite)
11. A) Adults only (Honey bee tracheal mite)
12. B) Larvae only (American foulbrood)
13. A) Adults only (Nosema disease)
14. B) Larvae only (European foulbrood)
15. A) Adults only (Paralysis)
16. B) Larvae only (Chalkbrood)
17. B) Larvae only (Sacbrood)
18. A) Adults only (Skunks)
19. A. Colonies used to make section comb honey should have young queens. Colonies with old queens are about twice as likely to swarm as are those with young queens.
    B. In the production of section comb honey, bees are normally crowded into a single brood chamber. It is important to have an abundance of empty comb for the queen to lay in and reduce congestion in the brood nest, the primary cause of swarming.
    C. It is important to have a bait section (partially drawn section) in the first comb honey section super. A proper bait section has the cells on comb foundation uniformly drawn about one-eighth to one-quarter inch. It should be in the center of the super and will cause the bees to start to work in the section super more rapidly.
20. Appearance of massive numbers of dying and dead bees at the colony entrance.
21. Tracheal Mites, Nosema Disease
22. When an individual is stung by a honey bee, it is important to remove the sting from the sting site, as soon as possible, to reduce the amount of venom injected into the person. Otherwise, due to muscular contractions, the stinger will continue to pump venom into the person for a period of time.

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

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

Clarence Collison is a Professor of Entomology and Head of the Department of Entomology and Plant Pathology at Mississippi State University, Mississippi State, MS.

GLEANINGS

AUGUST, 2003 • ALL THE NEWS THAT FITS

EAS 2003 AWARDS

Hambleton

Dr. Marla Spivak is Associate Professor and Extension Entomologist in Apiculture in the Dept of Ent at the University of MN. Her dedication to apiculture began in 1974 when she worked for commercial beekeeper, Jerry Cole, in NM, and later for Paul Limbach in CO. In 1978 she completed a Bachelor's degree in Biology from Humboldt State University in CA. She then became a research assistant for Steve Taber at the USDA Bee Research Center in Tucson before traveling through much of South America. There she gained experience with Africanized bees by visiting and working for beekeepers along the way, especially near Machu Picchu in Peru. In 1980, she assisted Dr. Orley Taylor with research on Africanized bees in Venezuela and then entered graduate school under Dr. Taylor at the University of KS.

Her current position is split between research, teaching, and extension.

Morse

Dr. Malcolm Sanford has spent 23 years as Extension Specialist in Apiculture, first at The Ohio State University and then the University of Florida. During that period, he wrote a monthly extension newsletter that went to 2,000+beekeepers in both states. He began using traditional printed media, but soon began taking advantage of emerging communications technologies and turned his newsletter into the first document of its kind to be delivered electronically via the web.

Dr. Sanford taught formal courses in apiculture, presented information to the general public through extension programs, and was active in beekeeping associations. He was awarded the AAPA Award for outstanding achievement in apicultural excellence in 1998.

Student

Heather Mattila is in her second year of a PhD program in the Department of Environmental Biology at the University of Guelph, Ontario, where she is working with Gard Otis to better understand the effect of pollen-stress in overwintering colonies. She has coordinated a two-year project that examines the efficacy of Apiguard, a two-year project that assessed the impact of Bt corn pollen on monarch butterflies, and in the past year, was the recipient of the American Association of Professional Apiculturists student research scholarship.

WAS HONORS DIXON

Don Dixon will receive the 2003 Outstanding Service to Beekeeping Award from the Western Apicultural Society at their annual August meeting, held this year at Simon Fraser University in Burnaby, British Columbia, Canada. The award recognizes his 25 years of service to the beekeeping industry while Provincial Apiarist with Manitoba Agriculture following completion of his M.Sc. research under the supervision of Dr. Cam Jay at the University of Manitoba in 1978.

Continued on Next Page

But Future For *Any* Board Cloudy
NHB REFERENDUM THIS MONTH

Honey producers and importers will have the opportunity to decide whether to continue the National Honey Board during a referendum voting period scheduled for July 25 through August 22, 2003.

The referendum will be conducted by mail ballot. All producers or importers of honey who produced or imported honey or honey products between January 1, 2001 and December 31, 2002 who were not exempt from assessments will be eligible to vote and should automatically receive a ballot and voting instructions from the USDA.

Continued on Next Page

ROYAL SOCIETY HONORS MARK WINSTON

The Royal Society of Canada, the Canadian Academy of the Sciences and Humanities, has elected sixty new Fellows, one Specially Elected Fellows and four Foreign Fellows to its ranks. In keeping with the motto of the Society, "different paths, one vision" these newly elected Fellows, while coming from diverse backgrounds and disciplines, all are dedicated to achieving excellence in their endeavours, and thus enhancing Canada's competitiveness on a global basis. Fellowship in the Royal Society of Canada is considered Canada's most prestigious academic accolade to which scholars and scientists aspire. "The Royal Society of Canada is honoured to celebrate the outstanding accomplishments of our New Fellows" said Howard Alper, President of the Royal Society of Canada. "They add in a meaningful and significant way, to the

Continued on Next Page

But Was It U.S. Honey?

CANADIAN HONEY TAINTED

The Canadian Food Inspection Agency and The Dickinson Family Inc. warned consumers not to consume some Dickinson's brand honey because it may contain chloramphenicol.

The affected product was distributed nationally after being imported from United States. It is being voluntarily recalled from the marketplace.

The affected product was distributed to food service establishments and hotels. There were no sales through retail stores. Although this product was not sold at the retail level, some consumers may have obtained this product from food service establishments or hotels for home use.

The affected product can be identified from the label which reads Dickinson's Honey, (No.) 1 White Liquid, Distributed by The Dickinson Family Inc., Salinas, CA, 93901, U.S.A.. This product is packaged in 32 gram glass bottles bearing codes 72C11, 72E13, and 72F14.

There have been no reported illnesses associated with the consumption of this product.

Dixon ... Cont. From Pg. 57

Throughout his career he has maintained a strong level of participation in several beekeeping industry and professional associations. He was the Secretary of the Manitoba Beekeepers' Association (MBA) from 1978 2003 and was active on many MBA committees, including the Chairman of the Organizing Committee for the Annual Convention. He also participated on numerous Canadian Honey Council Committees and was the Acting Secretary/Treasurer of CHC in 1981/82.

Don has been a strong participant in the Canadian Association of Professional Apiculturists (CAPA) and was a member of the CAPA Executive for several years, including 2 terms as President from 1985-1990. He also represented the CAPA on several international committees including the Tri-Country Committee on Africanized Bees and Parasitic Mites which, during the 1980's organized several symposia for beekeepers in Mexico, the U.S. and Canada as well as worked on developing coordinated prevention and control strategies for both Africanized bees and parasitic mites.

It is with pleasure that WAS recognizes the accomplishments of this extraordinary contributor to our industry, whose accomplishments, honesty, integrity, sense of humor, and respect for the dignity of others have earned him this most deserved honor.

HONEY BOARD ... Cont. From Pg. 57

Previous continuance referenda were conducted in 1991, 1996 and 2002.

For the National Honey Board to continue, a majority of the voters in the referendum (representing not less than 50 percent of the total pounds voted) must approve continuation of the program.

In a late development, the early July court decision regarding the constitutionality of the Beef Board has caused some to question *any* future for the Honey Board, which is also under review for the same procedures. (The AHPA is suing the USDA to have the Honey Board cease its mandatory penny a pound due to violation of free speech.) If the lawsuit is successful (like mushrooms, apples and now beef), the practicality of ending the Producer/Importer funded board (via this referendum), and starting a Packer/Importer board (as has already been proposed and initiated) seems moot.

If the referendum passes, USDA would shut down the board, at some time in the future, but assessments would immediately cease.

Honey producers or importers not receiving a ballot that are eligible to vote should contact Kathie Birdsell of the USDA's Agricultural Marketing Service, 888.720.9917. Voting will be July 25 through August 22, 2003. Ballots must be received by the USDA by close of business August 22, 2003 in order to be counted.

BYRD AMENDMENT VIOLATES OPEN TRADE

June 21, 2003 a World Trade Organization arbitrator gave the United States until December 27 to amend a law that violates open trade rules by diverting some import duties to U.S. companies.

The decision gives the United States four months less than it asked to implement the ruling, which could require members of Congress to repeal a popular provision that gives hundreds of millions of dollars each year to U.S. companies.

The European Union, Japan and other countries in Asia and Latin America who brought the case had asked for a July 27 deadline, six months after an WTO appeals panel ruling against the so-called Byrd amendment.

The law, named after Senator Robert Byrd, D-WV, requires the U.S. administration to distribute antidumping duties collected on "unfairly" priced imports to U.S. companies that sought the protection.

The complaining countries, the largest number ever to join in a single case, said the law compensated U.S. firms twice, by making imports more expensive and by giving the firms cash.

MN Poplar/Pesticide Problem Reviewed

EPA RESPONDS TO BEEKEEPER PROBLEMS

EPA has proposed a label change for Minnesota labels only, in response to continued problems in hybrid poplar plantations. Analysis shows that honey bees exposed to 24-hr residues of carbaryl (80% wettable powder applied at a rate of 1 lb/A) experienced 69% mortality on an acute exposure basis. The foliar dissipation half-life used for carbaryl was 3.7 days, which is the basis for the 4 day proposal.

This product is toxic to bees exposed to treatment and for four days following treatment. Do not apply this product to blooming, pollen-shedding or nectar-producing parts of plants if bees may forage on the plants during this time period, unless the application is made in response to a public health emergency declared by appropriate state or federal authorities.

GOOD CROP DOWN UNDER

Queensland's Capricorn coast is close to its maximum carrying capacity for bees after good rains drew beekeepers from other areas of drought-stricken Australia.

Trees on the coast now are in full bloom and southern and western beekeepers are flocking to the area.

Local beekeeper Max Bundersson told the Australian Broadcasting Corp. the new arrivals are putting a lot of pressure on the local flora.

"Too right it is," he said. "A hive can have 40,000 bees in it and all of a sudden you have got 400 or 500 hives coming into one area, and then another semi trailer will turn up down the road within about a kilometer and he will drop another 500 hives. That's a hell of a lot of bees to forage."

WINSTON ... Cont. From Pg. 57

extraordinary resource of talent and experience that constitutes the Society." This is what they had to say about Dr. Winstorn.... Mark Winston excels at both science and public communication of scientific concepts and controversy. He has pioneered research on honey bee demographics, swarming, division of labor and "killer" bees. His award-winning studies that elucidate how the queen uses her mandibular gland pheromone to control her retinue of workers have led to new products that enhance pollination and calm worker bees for international shipment. He is a prolific contributor to scientific journals. His recent writings on environmental issues and science policy have culminated in two highly acclaimed books, "Nature Wars: People versus Pests" and "Travels in the Genetically Modified Zone." He has also been a regular columnist for Bee Culture for over a decade. Congratulations, Mark.

And Sent To The U.S.

TAINTED CHINESE HONEY RELABELED

Death threats and a mystery car brake failure followed after a senior figure in the Australian honey industry attempted to expose a racket involving Chinese honey being relabeled and shipped to the United States.

"My wife and chldren were in the car when the brakes mysteriously failed within days of the death threats," the man said.

The threats came after he warned that the relabeling "had the potential to destroy our industry, not just give it a dent."

The man now is so concerned he refused to allow his name to be published. "My wife is terrified," he said.

Told of the threats, another big player said he was not surprised. "There's a lot of dollars inviolved in this."

The drama came to light during a *Bee Culture* investigation into the scale of the Australian honey relabeling operations.

This found that up to 2,228 tonnes (4.5 million lbs.) of Chinese honey was shipped to Australia and then re-exported to the United States in the 2001-02 financial year at a time when the U.S. had banned Chinese honey.

The figures were published in a survey of the Australian honeybee industry released by the Australian Rural research and Development Corp.

The report said:

"Australia normally imports a relatively small quantity of honey. However, in 2001-02 Australian honey production dropped markedly due to widespread drought, particularly in the eastern states. Australian honey imports increased with most of these imports subsequently being re-exported by processors to fill export contracts.

"Honey imported from Singapore in 2001-02, was most likely sourced from China and, along with other direct imports from China, was mostly re-exported to the United States."

This was at a time when the U.S. – along with Canada and the European Union – had banned Chinese honey because of health safety concerns over the levels of the antibiotic chloramphenicol which has been linked to aplastic anaemia, a serious disease with symptoms similar to some cancers.

A table in the report outlined the dramatic changes in Australian imports and exports.

It showed imports from Singapore in 1999-2000 and 2000-2001 were exactly zero not surpising considering Singapore has no bees.

But in 2001-02 the Singapore figure skyrocketed to 1,447 tonnes (2.9 million lbs.) as Singapore became the world's fourth biggest honey exporter.

In the same period imports from China rose from six tonnes three years ago and two tonnes two years ago to 751 tonnes (1.5 million lbs.) in 2001-02.

At the same time, exports to the United States rose from 108 tonnes in 1999-00 and 168 tonnes in 2000-01 to 2,344 tonnes (4.7 million lbs.) in 2001-02 – a year when Australian honey production was decimated by the worst drought since European settlement in 1788.

A spokesman for the Australian Customs Department said there was not a lot the department could say because a report had been sent to the Department of Public Prosecutions.

Other sources said two Chinese residents living in Sydney were to be prosecuted over the relabeling of Chinese honey as Australian product.

Government and industry spokesmen argued the honey never officially entered Australia but was simply transhipped. But they agreed that if this was the case the volumes would not have been included in the Australian import and export statistics.

Australian Honey Bee Industry Council (AHBIC) chairman Ray Phillips said in his annual report that the import of honey from China and other places continued to be a sore point with many producers.

"Regrettably, at a time when supply is so low it has become necessary for some packers to import honey," he wrote. "It is to be hoped that we return to regular seasons and the need for imports will dry up.

"In respect of imports, AHBIC has been successful in ensuring that all imported honey is now tested for chloramphenacol. We are also working with the government to draw up new procedures for the import of honey and its testing. It is time there was a level playing field between imports and exports and your peak body continues to work to achieve this end."

Federal Opposition agriculture spokesman Kerry O'Brien said in a statement that the Australian Quarantine and Inspection Service (AQIS) has admitted knowledge that Chinese honey has been imported into Australia, relabeled as Australian product and reshipped to the U.S.

"Under intense Labor Party questioning at a Senate Estimates hearing, AQIS has revealed that Chinese honey shipped in drums has been transited through Australia for the purpose of relabeling the product," he said.

"The honey may have been contaminated with chloramphenicol (CAP). AQIS could not confirm the number of shipments that have been transited through Australia.

"The Senate Estimates hearing also heard that some international honey has been labeled `Product of Australia' and shipped to third countries without even landing on our shores. This honey laundering is occurring on an unknown scale.

"According to an AQIS official, Agriculture Minister Warren Truss has known about the problem for up to 12 months.

"The department says it's a problem for importing countries, but Labor disagrees. This scam has the potential to do serious damage to the reputation of Australian honey producers. Mr. Truss must stop ignoring the problem and act to protect the integrity of Australia's honey trade."

But Truss said O'Brien's claims were unsubstantiated.

"Hollow, unsubstantiated claims of an 'ongoing' and clandestine 'honey laundering' trade are not only damaging to the Australian honey industry, but also to our international trading reputation," he said. "I urge the Senator to retract his scare mongering comments immediately.

"AQIS carries out surveillance testing of all imported honey for chloramphenicol and pesticide contamination and any product failing the testing is not allowed to enter Australia. Chloramphenicol is not registered for use in food production in Australia, including in honey production."

"Australian authorities last year became aware of a shipment of Chinese honey transhipped via Australia to the United States that was illegally labeled 'Product of Australia,' apparently in an attempt to evade U.S. anti-dumping penalties on Chinese honey," Truss said.

But Mark Higgins, a board member of Beequal, an AHBIC honey quality assurance operation, said the situation was so serious it risked Australia's premium honey markets throughout Europe, Asia and North America.

"This stuff (Chinese honey) is banned in England, in France, in Italy, in Japan, in Canada, but you can get it here in Australia," he said. "As soon as those bans came in, we got drowned in Chinese honey because they can't sell it anywhere else."

Industry players said Australia was not the only country involved in relabeling Chinese honey so it could enter banned markets. They named India, Thailand, Vietnam, Pakistan, Turkey and Malaysia as all using Chinese honey for their export markets.

"There will be elements that try to shortcut the system and use countries like Australia that have a good reputation," Ware said. "Ninety five percent in our industry are honest but with prices way they are there's a small element trying to cut corners."

LATE NEWS; Australian beekeepers said they are getting reports that Royal Jelly with an Australian certificate of origin has tested positive in Europe for chloramphenicol. The drug is not used in Australia, indicating Chinese relabeled product now has reached Europe.

For the entire story see www.beeculture.com/beeculture/buzz/index.html.

Display Advertisers

A Hillside Divided

Gwen Rosenberg

Like so many couples, my husband and I spend vast, seemingly endless hours of quality time together sharing many of the same hobbies and interests. I'm sure, on the surface, we appear to be the ideal couple. We work in the same office together, travel together, we even live together and have kids together. We are both officers in our local bee club. We drive to meetings together and sit next to each other. We laugh at funny speakers and eat snacks and chit chat afterward, all cheerfully side by side. I thought we were destined to spend every remaining moment of our lives together in happy agreement. There seemed to be no end to our constant, blissful togetherness.

There were signs foreshadowing the troubles to come, however, but we were young and innocent. All our married lives had been the epitome of compromise and understanding. That is until that dark and rainy Saturday afternoon we picked up our first beehives. The thunderheads seemed to gather over the middle of the yard just about where the hives Anyway, I guess the first real sign of trouble was the tremendous bolt of lightening that split open the earth forming a deep impassible crevasse between the two beehives. It was right around that time that I came to the unfortunate conclusion that we can not possibly, on this green earth, in a million years share an apiary. Ever. Period.

This was a painful realization, fueled by heart wrenching trips to the beeyard, sarcastically rolled eyes, deep sighs, snide comments about smoker fuel and out-right hostility over queen excluders. What would the other members of the bee club think? For the sake of the bees and our own good reputations, we have chosen to maintain the façade of a single apiary, yet we both know that this is a hillside divided. My Italians to the East and his Carniolans to the West and never the twain shall meet (although if you ask him I'm sure he'll start up with that whole drifting business again).

We had a tremendously cold and miserable Winter this year and this Spring we started our new arrangement. I didn't fight his taking custody of the Carniolans – I was beginning to gather that they would have been happier with him anyhow. I imagine the girls and I will get along just fine. Our hives prettily painted pink with an elegant *HERS* scrolled across the North facing wall, springtime flowers stenciled around the uppermost honey supers, and the hive tools tucked away neatly in their designated places. I've planted a garden for dried flowers to enjoy in case this Winter is anything like the last. And we'll all pitch in and get the new picket fence whitewashed before the snow flies again.

I view myself as more a loving matriarch than uncouth keeper, or even oppressor of my female, insect comrades. Ours will be a commune, built on our innate efficiency, extreme resourcefulness and above all cleanliness. Just as I learned the culinary arts at my mother's side, so will my peaceful Italian villages share their acquired knowledge to create sweet honeys from the diverse wildflowers gracing *our* side of the apiary. The population will lovingly tend to one another (with none of that kin-recognition problem *other* hives have) and nary have reason to sting out of discontent. The queens will enjoy comp time and benefits – including extended maternity leave, relaxed work-at-home arrangements and premier pre-natal care. Our honey will be sweet with mutual affection in a cooperative and nurturing environment.

Meanwhile, just next door, his hodgepodge of painted and stained supers will be oozing with propolis globs, and cracks and holes and crevices will leak water and light and careless bees. The tall weeds and smoldering ashes of bailing twine will mark the unkempt fiefdom of my husband's beehives. The landing pad will be littered and stained while tired bees with tattered wings try desperately to cure what little honey remains after the "harvest." No doubt his drones will leave half-eaten honey comb strewn about the hive and refuse to investigate prowling skunks in the dead of night. Burr comb will clog the queen excluder and young bees will emerge without the loving guidance of maternal care. Eventually his young bees will run wild, conspiring to one day liberate themselves. They'll meet in the recesses of the hive plotting and building covert queen cells. They'll conceal a cache of royal jelly, saving it not for themselves, but to feed the leader of their emerging movement. I imagine embittered and worn bees toiling under the command of their keeper until that fateful day when chaos will reign, and the population shall rise up, quite literally, and take flight, escaping to a nearby shrub or even a passing dog. They'll buzz to shared songs of protest, unburdened by the weight of filled pollen baskets and nectar pails. And then, when they again take flight, they'll land squarely in my awaiting (clean, efficient and welcoming) swarm box.

It's sad, really, that our marriage had to take this ugly turn, but I'm sure other beekeepers and their spouses have encountered similar tragic scenarios. Beekeeping has a long history

Continued on Page 54

BOTTOM BOARD