
JAN 1998

Bee Culture

THE MAGAZINE OF AMERICAN BEEKEEPING

JANUARY 1998 VOLUME 126 NUMBER 1

FEATURES

COVER

Most of us don't have a cactus blooming in one of our beeyards, but it's a common sight in the desert southwest. Two stories came from there this month. One is on managing African honey bees. The other is on the normal seasonal cycles that occur in that part of the country, along with some changes in overall management we may all need to be aware of, soon.

The photo from one of Dee & Ed Lusby's beeyards, is by Kim Flottum

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DEPARTMENTS

COLUMNS

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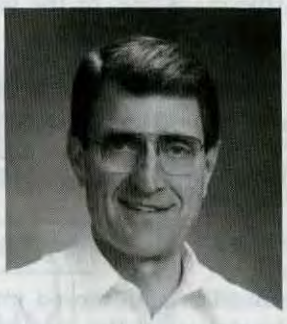
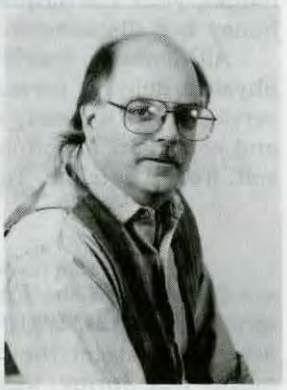


JOHN ROOT
Publisher



KIM FLOTTUM
Editor

INNER COVER

We begin this month, appropriately, a series on the future of the business of bees, beekeeping, honey production and marketing and, in all probability, beekeepers. The information is drawn from a one-day symposium held at the California Beekeeper's Convention, that was produced and directed by the Honey Board. Our first offering is a look at the changing face of consumers, and continues with a look at the escalating rate of change of food production and distribution. We finish with an overview of the Honey Board's plans for the next several years, and an even broader overview of the changing world we all live in. This will, I assure you, make you aware of how ill prepared we all are.

But first, let me give you a real-world, very simplistic example of the past competing with the future, and you judge where you should put your money.

Two weeks before Thanksgiving I bought a plane ticket for my daughter, Jessica, who lives in Portland, Oregon, so she could visit. I waited a few days before I mailed it because I wanted to talk to her first. But her schedule and my schedule made that impossible for a bit. I finally mailed it a week and a day before she was to leave. That I mailed it was my first mistake. Airlines now have virtual tickets – no paper, no envelope, nothing to lose or forget. But I wanted that old fashioned hard copy in my hand.

My second mistake was trusting the Post Office to deliver that hard copy of this ticket in the two to three days they said it would take their priority mail to do so.

I realize the U.S. Post Office handles trillions of pieces of mail daily, and losing only one is a miracle. But it was my one that got lost.

Anyway. Saturday afternoon Jess calls. "Ticket didn't come Dad, what's the deal?" She was supposed to leave Monday morning at 8:30 a.m. Pacific Time. I called the airline on Saturday and they said yes, it could be replaced, but to do it on Monday a.m. The travel agency I got the ticket through (why I didn't use an online service I don't know!), opened at 9:00 a.m. Eastern Time (that's 6:00 a.m Pacific Time). I was there, early, and by 10:00 a.m. Eastern Time (7:00 a.m. Pacific Time) we had, through the use of an electronic connection from Medina to Airline Headquarters to Portland, replaced the ticket, so that by 7:15, a.m. (Pacific) when Jess saunters up the ticket agent, she gets a boarding pass and walks onto the plane. No problem.

That, friends, is how the future will work. Whether it's airline tickets, purchase orders for barrels of honey, contracts for pollination, your subscription to this magazine, or the latest book on honey bee diseases.

All of those, you'll note *used* to rely on a hard copy with a physical delivery service. No more hard copies. No more delivery service. Only a steady stream of zeroes and ones, your computer and some sort of connection – whether hard, like a phone line, or soft, from a satellite. The future is here, and you'd better be ready.

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Speaking of the future, our office staff moved into new quarters this month. With the completion of the new candle factory across the street the last of the candle-making equipment was moved last Spring, leaving several large, though attached, buildings empty. The building directly behind the main office was the first to be remodeled.

This Summer, the 90-year-old structure was gutted, windows removed, ceiling steam cleaned and completely refloored. Then the walls were redone, new windows added, electronics installed, offices built in, heating and air conditioning upgraded, painted, partitions (cubicles) placed (but not before the carpeting was put down), and the break room and restrooms completely redone. Everything is trimmed in oak, all the ancient beautiful oak file cabinets refinished and some exotic lighting added to enhance all of the above.

And then we moved from the old office, where, actually twice as many people as normal have been during this renovation, to the shiny new back office area while they start on the front office and do essentially the same thing.

When it's all done there will be meeting rooms and private offices and computer rooms and a large and comfortable waiting room and reception area. Something like 25 or 30 people will eventually work here, taking orders, fixing computers, balancing the books, and producing this magazine.

The process has been a trial, and a handicap for those of us who use lots of space. But the 'coziness' during this time has helped everyone (well, almost everyone) appreciate better what gets done by everyone else.

For us the future is here, and it has fresh paint, new carpeting and more space. Not bad. And thanks, boss.

Kim Flottum

The Future, Again.

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Publisher ..... **John Root**

Associate Publisher ..... **Robert Stanners**

Editor ..... **Kim Flottum**

Production Coordinator ..... **Kathy Summers**

Circulation & Advertising ..... **Dawn Feagan**

Publications Assistant ..... **Mary Weigley**

Contributors ..... **Richard Bonney**
Roger Morse
Richard Taylor
Mark Winston
Clarence Collison
Ann Harman
B.A. Stringer
James E. Tew

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

MAILBOX

Native Bees?

This is a comment on Richard Taylor's response to Dean M. Robert's question, "Are honey bees native to North America?" (*Bee Culture*, November 1997, pg. 53). Taylor replied, "No one knows." I was surprised by Taylor's response, since in every publication I have read, no question exists. Honey bees are not native to North America.

I thought perhaps this important question deserved a little more elaboration.

From what I have read, evolutionary, geological, archaeological and other scientific evidence led to the accepted theory that honey bees are not native to North America. Honey bees are believed to have evolved in Europe, Asia and Africa. The oldest honey bee was found in East Prussia. Preserved in amber, it dates to about 50 million years ago.

Early colonists found the need to import honey bees by ship in the 1600s. Surely these frugal people would not have gone to that trouble if honey bees were found in their new world. In Europe at that time, upright log hives and skeps were in use. The voyage to North America lasted eight to 12 weeks. Probably honey bees weathered the grueling eight- to 12-week sea voyage in sturdy but cramped log hives.

Early settlers made due without beeswax for candles and honey for mead and sweetener. In 1622, ships landed the first imported hives of honey bees on North American shores. Eva Crane, a world authority on bees, believes the exact spot the first honey bees landed was Old City Point Wharf on the James River in Virginia. Beans and squash upon the pilgrims' 1621 dinner table would not have been present without the pollination services of native bees.

Species of native stingless bees were kept in pre-settled America in horizontal log hives. Stone end closures were used for these ancient hives and have been excavated in Belize, Mexico and Guatemala, the earliest coming from the Belize site and possibly dating as far back as 300 B.C.

The keeping of non-honey bees by native peoples could explain the language in Columbus' 1493 letter. Addressing Spanish royalty, he claims to have found "large open fields, honey, birds of many kinds . . ." upon the island he named San Salvador. It's also possible Columbus was exaggerating. After all, he was requesting money for more voyages. In the same letter, he claimed to have discovered "great mines of gold," something he was never able to justify.

Another explanation of ancient American beekeeping is described by author George P. Georgiou. He theorizes that honey bees were imported to our continent by Vikings around 800 A.D. Since the Vikings traveled only as far south as the area of Rhode Island, Georgiou's explanation seems less plausible than Crane's description of native people keeping stingless bees. Georgiou does not address the 300 B.C. Belize stone hive ends.

Honey bees were not imported to the west coast of North America until 1850. They landed in California and then were sent to Oregon in log hives. Remember, in 1850, California was only recently acquired by the United States, having been purchased in 1848 from Mexico under the Mexican Cession.

In his answer about whether honey bees are native, Taylor attributes "the white man's fly" quote to an early colonist. Author and veteran beekeeper Sue Hubbell recently credited that famous quote to an 1879 essay on bees by John Burroughs. She wrote of her belief that Burroughs' quote is rather unreliable and may have been taken from the poem, "The Song of Hiawatha," by Henry Wadsworth Longfellow.

Taylor writes, "It is unimaginable, somehow, that this vast continent could have bloomed . . . without the hum of the bee." North America was not "without the hum of a bee," but maybe without the hum of a honey bee. We have 3,500 native bee species which do a fine job of pollinating native and introduced plants.

Even now, sweeps conducted by Suzanne Bata, U.S. Department of Agriculture bee scientist, turn up only 10 percent honey bees in areas of blooming plants. Pollen bees comprise the other 90 percent of bees in tested areas. Only with the development of agribusiness, has the role of honey bees as important crop pollinators been investigated and manipulated. The agricultural system in the United States relies heavily on honey bee pollination. But I can imagine this continent as it once was, wild and unruly with virtually no cultivated fields. I can imagine the continent without European settlers.

My transient spot on this planet is enhanced because of honey bees. But imagining the fuzzy creatures packed in upright logs on crude pilgrim ships, cared for during tumultuous voyages, and gently carried onto new land with hands filled with hopes of bountiful harvests adds another dimension to my beekeeping.

Martine Courant
Fowlerville, MI

Extender Patties

I have a question about the article on "Using Terramycin . . ." on page 32 of the October 1997 issue. In the text describing extender patties, it mentions a use rate of a ¼ lb patty per colony, yet the numbers in the table don't add up; for instance using 3-6.4 oz packs of TM + 3 lbs sugar + 9 lbs of shortening yields about 13 lbs of

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material, which would yield about 52-¼ lb patties, not 36. Also, the amounts for one colony has a 1:1 ratio of shortening to sugar, whereas the other formulations have a 1:3 ration.

A clarification would be welcomed!

Steve Parise

Editor's Note: *Yes, the written instructions were a bit confusing, but the dosages given in the chart are correct. It is important to apply one, 6.4 oz. package, in an extender patty, to 12 colonies to get the right amount of medication to a colony. You can vary the sugar and/or shortening all you want.*

Ants & Things

I just finished reading James Tew's story *A Pest Is A Pest Is A Pest*, in the November issue. Very interesting, but it would seem Mr. Tew has never kept bees in Florida. At least not in this part of Florida.

"Tampa" ants and yellowjackets are a major problem. Ants more than yellowjackets, though; they killed off three healthy hives plus the observation hive I use in my flea market booth. They were in my yard, so I could see the action very clearly. I did find a cure for the yellowjackets – a little drastic maybe, but it worked. I removed all my bees from the area to prevent bee kill. I took an old brood chamber ready for the burn pile and taped up all the holes, found a frame – also in bad condition, with honey in it, and placed them in the area where the hives had been sitting. Soon the yellowjackets arrived.

I let them have their fun; then, payback time. I moved the brood chamber long enough to put a deep coating of Sevin dust just inside the entrance and put masking tape across the entrance just above the bottomboard, leaving just enough space for the yellowjackets to crawl under so they couldn't fly over the Sevin dust. Soon they were flying back to their nest covered in Sevin dust – no more yellowjackets. If you can find the nest, a gallon of gasoline will work much faster.

Now! Ants!

Here it seems we have more types of ants than butterflies. Most are just a pain, some a real problem. Fire ants have killed colonies of bees, but that is rare. We have a very tiny ant (not the sugar ant) that chased a good strong colony of bees out of a hive for me. The brood and honey were there, along with what appeared to be millions of the little pests. We also have bad boys (or girls) that we call bull ants and sometimes carpenter ants. If you use inner covers or older telescoping covers, sooner or later, it will be full of bull ants, and soon after that, you will have a hive full of ants and dead bees.

Many beekeepers don't ever know how their colonies died; bull ants usually attack at dawn and dusk.

I had one very strong hive boiling over with bees – no mites – beside my driveway. A friend knocked on my door at dawn saying ants were attacking the hive. Before I could get there, most of the bees were dead, including the queen. The ground was covered with thousands of dead and dying bees and ants. The bees put up a good fight, but lost. The hive was full of ants eating the larvae and honey.

Some beekeepers say a strong hive cannot be killed off by bull ants. Now if I could find a cure for bull ants I would be the most popular beekeeper in Florida.

Joe Pruitt
Dover, FL

AFB And Terramycin

The October issue carried recent articles on foulbrood diseases, particularly American foulbrood. James Tew's article asserts with confidence the ability of Terramycin treatments to control this scourge. But it is not clear to me precisely what has been "controlled." Sources touting the worth of Terramycin treatments for *both control and prevention* are most vague on their point, considering the pathogen is not killed but remains available to infect the next generation of larvae once treatments are lifted.

Mr. Tew considers the likelihood of AFB clinical symptoms returning to afflicted colonies even after a substantial period of treatment. This has indeed been my experience. And during this period, would not such colonies serve as an ongoing source for spreading this disease by drifting, robbing (contaminating water sources) etc. Therefore, precisely what might treatments have achieved? What has been controlled?

Further, the importance of recognizing symptoms has been emphasized. Well and good. But in terms of prevention, what can be achieved with countermeasures that are implemented after the fact? Consider the recommended practice of overwintering colonies with Terra patties. Assuming the patties work as designed, would not diseased colonies be likely to appear in good health the following Spring? Would not such colonies be subject to normal hive manipulations: equalizing, splits, and so forth, due to the absence of observable clinical symptoms of AFB? And in the process, would not this highly infectious disease spread to other colonies through business-as-usual practices? Precisely, where would be the "preventative" aspect of Terramycin treatments?

Finally, regarding the destruction of AFB by heat: What minimum temperature is required to kill AFB? I'm told that wax melted down (from infected colonies) is perfectly O.K. Is this the case?

Wayne Gully
San Angelo, TX

New Ideas

You are probably always looking for new articles for your publication.

I think there should be an article on the price of used bee equipment, bees in hives, etc.

Also a story on whether it would be feasible to start up a bee operation with 500-1,000 or more colonies with *all new* or even used equipment. This would make two stories.

A Reader

Continued on Next Page

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Editor's Note: *Dick Bonney did an excellent article on buying used equipment a few years back. He emphasized condition of the boxes and frames, bees or not, honey or not and the current price of each for next year. And, yes, you can buy problems. Starting with 500 - 1,000 colonies depends on crop potential, amount of debt and basic skill. Not impossible and done occasionally. It comes down to the math.*

More About Containers

I read with interest the article by Ann Harmon called "Glass & Plastic: What does the Future Hold for Honey Containers?" in the November 1997 issue. Ms. Harmon mentioned many options in glass and plastic containers, but not a good source for these containers. There is a company where you can buy almost all those containers in quantities of one piece to truckloads.

Unfortunately, Ms. Harmon is right when she says that in order to use plastic containers, you have to sacrifice the clarity of the container. Steps are being made in coming up with a plastic container that is able to sustain a shelf life when filled with a food product, and is as crystal clear as the glass containers used now. Technology is getting closer and closer to making it possible.

Hot-fill temperatures are also a problem, though different resins can sustain temperatures of up to 250°F (like polypropylene - PP), not the 165°F Ms. Harmon stated.

Unfortunately crystal-clear polyethylene terephthalate (PET), one of the most popular resins for food applications, can only sustain temperatures of 125° to 160°F before distortion. Two other choices of resin for honey containers are low-density and high-density polyethylene (LDPE and HDPE respectively), and fill temperatures range from 180° to 220°F for LDPE and 175° to 180°F for HDPE before distortion sets in, but their color is translucent and doesn't show off the beauty of the honey.

So until such a time as the packaging industry comes up with a crystal-clear container that is shelf-stable and hot-fillable, the honey industry has to make do with the options Ms. Harmon recommended in her article.

One source for all those options is Berlin Packaging. We have a no-minimum order, same-day shipping center in the Chicago-land area that carries almost every container listed in Ms. Harmon's article, and then some.

In plastic, there are 12-, 18- and 28-ounce crystal-clear PET wide-mouth jars; 9¾-ounce HDPE inverted squeeze bottles; LDPE cylinders in 8-, 12- and 16-ounce sizes; and 8-ounce HDPE cylinders. And Berlin is in production on three PET honey skep molds in 1-, 1½- and 2-pound sizes.

Glass has even more choices: from the gourmet-style Hexagons, octagons, Dodecagons, Multifacted and Square jars to 8- and 16-ounce canning jars; 190 ml straight-sided food jars; mayonnaise jars; Queenline jars in ½, 1, 2 and 4 pounds and even the 4-ounce novelty salt and pepper mugs and 16-ounce drinking jars that Ms. Harmon talks about.

There are many different closure options, too, like the ribbed spout caps, lined plastic caps and the elegant gold (and white) lug caps for hot-fill applications.

For a free four-color catalog with each and case quantity prices, call 1-800-4-BERLIN (800-423-7546) or email marketing@berlinpackaging.com.

Nikki Rowe
Berlin Packaging
Chicago, IL

•

I am writing to comment of the article in the November 1997 issue of Bee Culture titled "Glass or Plastic, What Does the Future Hold for Honey Containers" by Ann Harmon. The article did an excellent job at pointing out the many advantages and disadvantages of glass and plastic packaging. I am certain the information was appreciated by your readership.

I am disappointed by the article's lack of attention to several of the containers offered by Gamber Container, Inc. (GCI) to the beekeeping/honey packing industry. GCI has made an incredible effort to provide the honey industry quality containers, manufactured domestically and designed to meet the industry's specific needs. We have established a distributor network that makes it possible for individuals across the country to have access to honey containers.

In fact, we have invested in expensive container molds to ensure that the industry keeps a supply of certain hard-to-locate items. A case in point is that when we realized the 16 oz. cut comb jar, called the wigwam style, was to be phased out, Gamber Container reacted quickly by introducing the GCI Round Jar. When it became impossible to obtain 5 lb. glass, we purchased an entire production run from the glass company. Both the GCI Round and the 5 lb. Glass were advertised to the industry via *Bee Culture*.

In the plastic container line, our clear honey bear features front and back label panels and was not featured in any of the pictures. Did you realize that the honey bear is celebrating his 40th birthday this year? Ralph Gamber and Woodrow Miller invented the bear in 1957.

Please realize GCI is working very hard to meet the packaging needs of the honey industry. We want the industry to know the Classic line of glass jars and our other items, such as the GCI Round and 5 lb. glass, are available across the USA via a network of distributors. Thank you for the opportunity to bring this to your attention.

Frank Lewis
Gamber Container Inc.
Lancaster, PA

•

In November '97 "Glass or Plastic" article by Ann Harman she states on page 24-25 "Honey tends to crystalize faster in K-resin due to the chemical nature of the plastic." This needs a reference and some support as any reference to "chemical nature" can raise the ears of the FDA. My plastic chemists say that K-resin is less of a barrier than PET, they are at a loss

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on the chemical comment. Perhaps you should contact K-resin manufacturer. It is either P-66 or BP.

Jim Metcalf

Say It Again!

May I add a comment to the letters regarding the column from the previous century, about finding one's queen? When I saw the phrase "I could run it again today," my reaction was "Please do!" I've been at this, off and on, for about two decades, and have yet to find a queen by any other method than pure accident!

Item 2: Apitherapy. I supply bees to some people practicing apitherapy. Recently, I read an article about a shop vac attachment a man built to pull bees into a shipping cage. Was this in your magazine? I sometimes get requests to remove bees from houses. With this device, I could help the worried homeowners and the M.S. and arthritis patients at the same time.

Karl Zerovich
Cortland, OH

Editor's Note: *The article on the Bee Vaccuum was in our May, 1997 issue, written by Jim Tew.*

Evolution Not Excluded

Mr. Leon Moyer (no relation) complained, in the November issue, that Clarence Collison's reference to the 60- to 100-million year co-evolution of bees and flowering plants cannot be proven and that all such references to evolution should be excluded from *Bee Culture.*

Mr. Moyer does not understand how science works. A scientist never attempts to "prove" a theory, but to *disprove it.* He – or she – designs experiments that test predictions made by the theory. If the data from the experiment supports the theory – is consistent with the prediction – the theory is provisionally accepted as true. Often, however, the data fails to support the theory, forcing the scientist to revise the theory, or develop a new one.

Evolutionary theory is one of the most soundly tested – and supported – theories in all of science. It is founded on two universally accepted observations: that all life comes from previous life and that plants and animals alive today differ from those that lived in the past, as evidence by fossils. And the older the fossils the more differences they show. These observations, plus a wealth of other data, are entirely consistent with the idea that living things have evolved. This is not a fact, but a reasoned conclusion based on evidence.

Scientists are very practical people. They insist that their theories work – that they explain old observations and predict new ones. Evolutionary theory explains so much that the American Association for the Advancement of Science included an entire section on evolutionary theory in its seminal book, "Benchmarks for Science Literacy." Evolution explains how complex flowers like orchids came to be, and how the basic insect body design was modified into the marvelous structures we find on the worker bee.

Mr. Moyer describes himself as among those ". . . with sincere religious beliefs, (who) wish to give the honor to God for creation, not to man for the development of a theory of evolution . . ." To my mind, this places God in a box, incapable of setting the equations that inexorably led, over a billion years, from microscopic organisms to rational humans. There is nothing about science that denies one from holding sincere religious beliefs, a point made on several occasions by the Vatican.

When Mr. Moyer encounters valid references to evolution and geologic time spans, he has a simple remedy: skip to the next paragraph. But if the editor responds to his imagined offenses by eliminating such references, then all of us will be losers.

Wayne A. Moyer
Norge, VA

NHB Funding Sources

After looking at the proposal to assess the 'packers' one cent to help pay for more research and to fight adulteration, I cannot help but disagree strongly with the method they used to get this funding. Read on, and I hope you'll agree with me and tell them to send it back to the drawing board until it is more equitable for all concerned.

Why is it fair that Joe Beekeeper who has 100 colonies and produces just enough honey per year to get on the Honey Board assessment books would have to pay a total of two cents per pound (assuming Joe packs his own honey) while Clarence Commercial who as 2500 colonies and produces a quarter million pounds of honey per year only pays one cent (assuming Clarence packs no honey)? As the proposal stands, this is what would take place. Yes, we do badly need more research which takes money and good research will ultimately benefit all, but how come a Pontius Pollinator with 3,000 colonies gets off scot-free (produces no honey)? Or Quentin Queen-Raiser, who benefits from such research also does not have to pay (produces no honey)?

If the money is to be used for research, then the pollinators and the queen raisers should have to help. While I agree that the packers should be helping pay for the Honey Board's efforts, it should be legitimate packers who buy honey in bulk and produce zero or only a negligible percentage of all honey they sell. How could the 'packer' situation be made more equitable? By giving all 'packers' (if packer is defined as one who puts honey in small containers which are in turn sold) a yearly exemption, which anyone can file, and which covers a great part of those beekeepers who with hard work and ingenuity have carved out a niche in the world of commerce for their product. What should this exemption be? I propose 35,000 pounds which would cover a beekeeper with 500 colonies who produces a 70 pound average. So all beekeepers producing less than the 35,000 pounds would be assessed only one cent,

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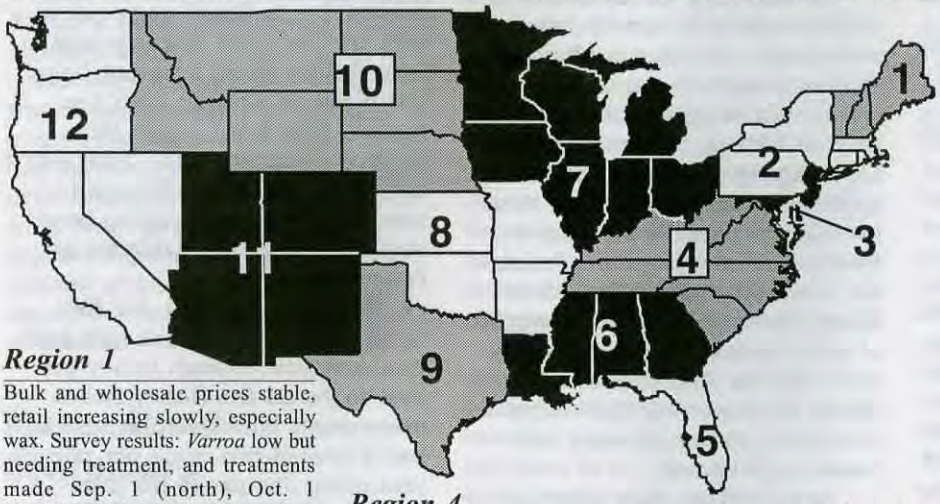
JANUARY – REGIONAL HONEY PRICE REPORT



Region 1

Bulk and wholesale prices stable, retail increasing slowly, especially wax. Survey results: *Varroa* low but needing treatment, and treatments made Sep. 1 (north), Oct. 1 (south). Little AFB present, but treatments routine. Honey prices not raised, and being bought at same prices as last year.

Region 2

Prices steady but up a bit bulk and wholesale, down a bit retail. Survey results: *Varroa* populations low, but enough to treat this Fall. Treatments made mostly in Oct. Essentially no AFB found, but treatments routine. Selling prices same or lower, buying prices same.

Region 3

Bulk prices down, wholesale stable, retail up a bit. Survey results: *Varroa* low to nonexistant, but Fall treatments standard, usually in September. AFB not much of a problem but treatments routine. Selling prices down, but buying prices up, a bit.

Region 4

Prices down on all fronts, but only a little. Retail and wholesale prices will increase or stay steady, though. Survey results: *Varroa* present to very high mostly, with Fall treatments occurring from August to November. AFB still around, even though preventative treatments routine. Selling prices expected to remain stable.

Region 5

Bulk prices down, retail steady to increasing a little. Survey results: *Varroa* populations mixed, up and down, but treatment generally given in August or September. AFB not a problem, nearly everyone treats.

Region 6

Bulk prices up, wholesale steady and retail up. Survey results: *Varroa* still present and causing severe problems in some areas. Treatments generally in October. AFB not a problem, but treatments routine. Selling, and buying prices steady.

Region 7

Bulk and wholesale prices steady, retail up. Survey results: *Varroa* present but not a critical problem, as most treat. Fall treatment usually in September/October. Some AFB present but all treat routinely. Selling prices steady, but many are offering less this year when buying honey.

Region 8

Bulk and wholesale prices down to steady. Retail steady. Survey results: *Varroa* not a major problem, with Fall treatments generally in late August and September. AFB shows up on occasion, even with routine treatment. Selling prices steady, buyers offering less.

Region 9

Bulk, wholesale and retail prices unchanged in a month. Survey results: *Varroa* almost nonexistant, but not gone away. Treatments in late Fall help. Routine AFB treatments keep this in check.

Region 10

Bulk, wholesale and retail prices down since last month. Survey results: *Varroa* present, but under control. AFB scarce, because everybody treats. Selling prices are down, and most here don't buy to resell, so prices only steady.

Region 11

Bulk and wholesale prices down, retail only steady. Survey results: *Varroa* present, but seems under control with most Fall treating in October. AFB still around, but not serious. Everybody treats for it. Selling prices seem to be inching up, prices offered are less.

Region 12

Bulk prices up a bit, wholesale prices down a bit and retail prices steady. Survey results: *Varroa's* influence not strong, most treated in August/September in north, October/November in south. AFB not a problem but everybody treats. Selling prices only steady, offers are higher.

	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																
60# Light	65.79	69.60	51.00	70.90	64.50	64.50	65.69	78.00	58.00	61.50	70.00	72.00	54.00-87.00	67.55	67.91	68.44
60# Amber	61.97	64.68	51.00	61.20	57.00	58.00	63.50	73.33	54.00	63.00	59.33	65.00	51.00-87.50	64.24	63.88	67.07
55 gal. Light	0.88	0.88	0.88	0.87	0.79	0.87	0.86	0.90	0.83	0.80	0.86	0.87	0.66-1.23	0.87	0.85	0.96
55 gal. Amber	0.83	0.81	0.82	0.83	0.75	0.81	0.82	0.85	0.80	0.75	0.83	0.82	0.66-1.15	0.81	0.81	0.91
Wholesale - Case Lots																
1/2# 24's	28.51	26.39	29.08	32.79	29.08	28.07	29.22	29.08	30.00	29.08	27.75	28.08	20.40-48.00	29.11	30.08	29.67
1# 24's	42.83	43.34	38.40	45.52	40.80	42.50	42.67	39.36	49.00	36.33	49.53	46.40	32.40-54.00	43.09	43.44	40.90
2# 12's	38.09	33.23	40.20	44.58	36.00	38.30	38.54	39.20	41.00	36.15	44.30	39.48	29.40-48.00	37.39	39.93	38.43
12 oz. Plas. 24's	36.45	38.24	38.40	38.53	36.00	34.60	36.83	33.60	42.00	38.15	46.70	29.20	15.56-48.00	35.44	37.36	35.64
5# 6's	40.02	38.38	46.50	46.13	39.00	41.04	36.38	39.00	46.00	36.13	43.78	38.91	31.80-52.50	41.22	**41.89**	**40.50**
Retail Honey Prices																
1/2#	1.93	1.47	2.83	2.17	1.29	1.80	2.33	1.76	1.95	2.83	1.85	1.75	1.09-2.96	1.76	1.85	1.79
12 oz. Plastic	2.22	2.17	2.25	2.28	2.25	2.23	2.22	2.24	2.95	2.14	2.55	2.27	1.59-2.99	2.22	2.22	2.19
1 lb. Glass	2.75	2.64	2.50	2.79	2.18	2.72	2.72	2.68	3.50	2.41	3.58	2.96	1.99-3.75	2.67	2.61	2.58
2 lb. Glass	4.40	4.78	4.50	4.65	3.88	4.24	4.09	4.54	4.75	4.15	4.67	4.73	3.29-6.09	4.42	4.33	4.38
3 lb. Glass	6.10	6.39	6.50	6.57	5.15	6.35	6.26	6.20	6.25	5.49	6.50	6.20	4.50-8.00	6.08	5.99	5.77
4 lb. Glass	7.75	7.98	8.60	8.32	7.50	7.13	8.35	8.31	7.00	8.60	8.60	8.60	6.00-10.25	7.74	8.12	7.28
5 lb. Glass	9.96	10.17	9.75	9.80	7.88	8.50	10.94	9.17	10.00	7.59	9.07	10.25	6.69-12.95	9.06	9.11	9.27
1# Cream	3.22	2.96	3.84	3.48	3.84	3.13	3.13	3.30	5.75	2.51	3.74	3.07	2.19-6.00	3.13	3.24	3.06
1# Comb	3.76	3.70	3.94	3.72	3.94	4.00	3.83	2.88	6.00	3.94	4.75	4.00	1.95-6.00	4.19	4.01	4.05
Round Plastic	3.67	2.99	3.50	3.85	4.24	4.00	3.51	3.26	6.00	4.24	6.50	4.25	2.60-7.50	3.86	3.71	3.82
Wax (Light)	2.68	3.13	2.50	1.88	1.95	2.68	2.46	2.60	4.25	1.70	3.42	2.98	1.75-6.00	3.04	2.91	2.86
Wax (Dark)	4.16	3.37	2.50	6.72	1.50	2.39	2.13	2.25	3.25	1.60	3.33	1.75	1.20-6.00	2.62	2.41	2.67
Poll. Fee/Col.	35.59	41.50	26.74	38.60	25.00	35.67	35.83	40.00	15.00	37.00	37.19	35.50	15.00-55.00	34.03	35.96	33.96

MAILBOX

the same as beekeepers who put their honey in steel drums (barrels).

Until this proposal is made more equitable and fair to the small producer, I hope you will join with me in giving the current proposal a resounding "no" and send it crashing to defeat. For those that can hear, send it back to the drawing board . . .

Michael Meyer
Spring Branch, CO

Orchard Mason Bees

After reading the article about orchard mason bees in your May 1995, issue by Brad Gill, I was fascinated and had to try my luck at attracting mason bees. Sure enough, after setting my block up in early Spring under the eave of an outbuilding, I had a fair amount of the block filled by Summer. After leaving the block up till September, as the author suggested, to allow for larva development which means by Fall the nest is no longer considered fragile, I went out to take it to a sheltered overwintering spot. I was so disappointed to find every mud cell drilled into and the larva eaten. What does this? Next year I'm taking it in earlier. Maybe then I can avoid these marauders.

Joseph Fazekas
Richmond Hgts, OH

Editor's Note: *There are several pests, predators and parasites that attack these nests. It was probably a parasitic wasp, which invades the nest and lays a single egg on a larva. But without further investigation this is a guess. Protecting it earlier in the season is certainly a good idea.*

Bees & Yellowjackets

The cover picture on the October *Bee Culture* is remarkable. It's also disgusting to see honey bees and yellowjackets dining side by side on honey comb in apparent perfect harmony. Where are these bees defensive instincts, their zeal to run intruding free lunchers out of the hive with due dispatch?

After recovering from my embarrassment over these bees accommodative behavior, however, I noticed several important differences between the honey bee and the yellowjacket as they lined up side by side. No, I'm not referring to their colors but to the hairs on their bodies. They tell a lot about their wintering habits.

Since the honey bee doesn't hibernate, she needs to collect stores for the Winter. Hence the hairs on her legs, the baskets for retrieving pollen. The yellowjacket dies off in the Fall except for queens which hibernate. If they aren't eating in the Winter, they don't need to gather and store food. Therefore, smooth legs.

In addition the honey bee has lots of hair on her abdomen for Winter insulation. The body temperature of the hibernating yellowjacket drops essentially to the ambient level so no insulating hair is necessary.

A. Gary Shilling
Springfield, NJ

Editor's Note: *Gary Shilling is a regular columnist for* Forbes *magazine.*

Ether Roll

Will you please give me some information on two subjects:

How should I quantitatively measure the amount of mites in the Fall with the ether roll method? I have been checking two to three colonies (in a yard of 15-20) with a 1 lb. (widemouth) honey jar (about one to two inches of bees in the jar). I have been finding some, but few mites and would like to know exactly how many is a problem and at what level is treatment necessary.

In my extracting room there are always a few bees that are brought in with the honey supers and fly around and cluster near the windows. These are always easily removed and are not a problem, but they tend to "spot" the windows or lighting fixtures. I know that honey will not support bacteria but other fruits or foods may. Are these feces "spots" a source of the *E. Coli* bacteria that has been a concern of cider mill operators this year? Is insect feces different that animal or bird feces?

Bill Schnute
Dryden, MI

Editor's Note*: There are some rough calculations on mites/bee counts in an ether roll compared to mites/colony. However, the concept requires knowing how many bees you are using in the roll, and the approximate population of the colony you are measuring. A rule of thumb is that if you sample 1% of the colony (300 of 30,000 bees) and find three mites or less (a 1% infestation rate) at the time of year you are sampling, not treating before Spring may be safe. Personally, I wouldn't gamble. This sampling technique is still rough, and a colony is expensive to lose. Any mites means treatment, for me.*

E. Coli bacteria have not been traditionally associated with honey bees. Fecal material that has dried will not support E. Coli, nor, my sources tell me, will this bacteria flourish in a sugar-rich, protein-poor media, such as the spots honey bees leave. Keeping your honey covered while processing should reduce to zero any problems. Moreover, honey itself will not support E. Coli.

Roger Morse

Research Review

"Do drones drift as much as we think? Or less than we think?"

Studies undertaken in Poland confirm that honey bees are good pollinators of strawberries in greenhouses. Both the size and quality of the fruits produced were improved when honey bees were used. Two strawberry varieties were tested: Kent (Canadian) and Krona (Dutch). In exposed fields, strawberries are both self-pollinated and receive some pollen that is moved from one flower to the next by the wind. Since there is no wind in a greenhouse, production has always been lower unless honey bees or some other pollinating agents are used. In the tests reported here, the check plots were windblown with a hair dryer or left untreated.

I especially liked one aspect of the experimental design that may be of value to those who use bees in greenhouses. Usually, when colonies of bees are placed in a greenhouse for pollination, most of the bees that fly do not visit the flowers but rather they bang against the glass or plastic and soon die. This may occur whatever the greenhouse crop, and as a result there are a number of dead bees on the floor. There are no differences in plastic and glass greenhouses in this regard.

Growers who rent bees for greenhouse pollination are often discouraged when they see bees hitting against the glass or plastic. They think the bees are not pollinating and that they are not getting their money's worth. The flying bees that behave in this manner are, of course, mature foragers that are accustomed to free flight outdoors. Because of their background and early learning, they are of no value in a greenhouse.

In these experiments, the colonies were small and had only one frame of brood. When these nucleus colonies were made, they were carried some distance away so that any foragers that left the new hive would return to their old home. Following this, the colonies were moved into the greenhouses in the middle of a warm, sunny day, again leaving the foragers behind to return to other hives in the apiary. Thus, there were two efforts made to rid the pollinating colonies of older bees. The bees in the moved colonies "behaved calmly, and in a short time they undertook their work on the blooming strawberries."

Wilkaniec, Z. and M. Maciejewska. 1996. *Utilization of honeybees for the pollination of the greenhouse-cultivated strawberry.* Pszczelnicze Zeszyty Naukowe 40(2): 227-233.

Different Smokes for Mite Control

Preliminary tests by Dr. Frank Eischen of the U.S. Department of Agriculture Laboratory in Weslaco, Texas show that smoke from some fuels is more effective than others in knocking down *Varroa* mites. Smoke from dried grapefruit leaves and from the creosote bush cause mites to drop off bees more than does smoke from other materials that were tested. Neither smoke kills the mites, and creosote bush smoke appears to be toxic to bees.

Eischen emphasizes that this research is not necessarily for the purpose of finding materials that may be burned in smokers for mite control, but rather to identify the chemicals in these smokes that may be used in *Varroa* mite control. Over 40 plants have been tested to date.

Adams, S. *Smoking out bee mites.* Agricultural Research 45(8): 19. 1997.

Drone Drifting

It is well-known that drones drift easily from one colony to another; however, reports on drifting "are often controversial." In tests reported in the paper cited below drone drifting was studied in four different races: German, Carniolan, Caucasian and Italian. Differences were found between races.

In these tests, drones that ranged in age from zero to seven days were marked and placed back into their parent colonies. There were four colonies used to test each race over a period of two years. Three weeks after the drones were marked, the colonies in the apiary, and a neighboring apiary, were examined, and the drones counted.

Fewer than two percent of the Italian drones drifted to other colonies, while 20 percent of the German race did so. Caucasian and Carniolan drones drifted about the same as the Italian drones. Most of the drifting was between colonies in the same apiary, and only a small number were found in an apiary 300 yards away. BC

Skowronek, W. 1996. *Drifting behavior of drones of different races.* Pszczelnicze Zeszyty Naukowe 40(2): 249-250.

Mark Winston

Innovation

"Innovation can't be forced, and if you sit down at your desk and decide that you will come up with an innovative idea in the next five minutes, it simply won't happen."

Innovation is on my mind this month because I recently had the pleasure of attending an awards banquet to honor innovators. The banquet, and the awards, were sponsored by an unusual foundation, the Manning Awards Foundation, which was established to recognize and encourage Canadians who create and promote a new concept, process or product; in short, innovators. The awards offered by the foundation over the years have gone to innovations as diverse as a replacement knee, an egg-shaped, enclosed lifeboat, a new plant breeding process used to breed new strains of barley, and an around-the-world wheelchair trip to raise money for spinal injury research and increase the world's awareness of the capabilities of the disabled. The awards stretch to the limits of human ingenuity, but they hold one thing in common: They recognize people who did something novel and useful.

Scientists, of course, are in the business of doing novel and hopefully useful things, yet few of us ever create a truly new idea or product. Most scientists work in the trenches, doing mundane and tedious research that increases knowledge by tiny increments. I don't mean this as a comment on science alone; most people in any field do average work, and big steps forward are unusual in any walk of life. Innovations, truly new ideas, are not something that we train students to do, or deliberately set out to accomplish. My impressions from this banquet, and from thinking about innovation, tell me that novelty comes indirectly, and has a great deal of serendipity to it.

Oddly, innovation often involves simplicity rather than complexity, and most innovators seem to have an unusual ability to take complicated concepts, simplify them, and rearrange simple ideas back into a complex structure. Take the most significant beekeeping innovation in history, the invention of the Langstroth hive. Langstroth's idea was brilliant, and simple: He set out to build a hive that mimics the dimensions and spacing of a natural bee nest, but make the combs movable by attaching them to frames. What could be simpler? Yet, the permutations of the resulting hive designs exhibit great complexity in configurations, sizes and construction details.

This ability to observe the underlying simplicity in nature and construct a new idea from it is the essence of innovation, yet few of us are able to connect simple information in new ways in order to create something that's never been thought of or done before. We certainly don't learn how to be novel in school. Most education involves presenting students with organized information, having them memorize it, then judging them on how well they regurgitate it back on an exam. We don't encourage students to reorganize information in their own unique, individual ways, and it's no wonder that the end result of our educational system is competence without inquisitiveness, stacks of knowledge without bridging connections, straight-line thinking leading to predictable results rather than lateral thinking leading to innovation.

Possibly the worst thing we do in training scientists is to encourage workaholism, which is the greatest suppressor of innovation. The extent of our scientific addiction to overwork was brought home to me years ago, at another awards banquet, at which a number of senior scientists were receiving awards along with to some young high school students who were being recognized for science fair projects. One by one, the moderator and the speakers at this banquet got up and talked about how they put in 12-hour days, seven days a week, and were totally immersed in their work. The speakers tried to impress the youngsters by claiming that they were busier, worked harder, and were more committed to their jobs than the previous speaker. Interestingly, none of the award-winning scientists presented this sad picture of obsessive behavior. Rather, they all mentioned family, friends, community and service to others as instrumental in their awards, rather than focusing on excessive work habits.

The environment when I was a graduate student reflected this ethic of overwork. It was typical for many students to work evenings, weekends, and holidays, driven by the compulsive and misguided ethic that we would succeed if only we pushed hard enough, worked long enough hours, and focused completely enough on our work. Most of us did "succeed," if success is measured by getting a job, but few of us have been innovators. Perhaps we confused hard work, which certainly is necessary to innovate, with working too hard, which narrows our thinking, reduces risk-taking, and leads to

Continued on Next Page

"This ability to observe the underlying simplicity in nature and construct a new idea from it is the essence of innovation, yet few of us are able to connect simple information in new ways in order to create something that's never been thought of or done before."

predictable patterns of discovery rather than novel directions.

The single, unifying element that I see in innovators is that each has a life outside of work. One may play music, another may be active in a religious organization, and a third volunteer at the local food bank. Perhaps an innovator reads fiction voraciously, ties flies and fishes for trout, or runs marathons. Each takes elements from his home life and lets it cross-fertilize his work, so that new connections get made and innovation happens.

Take my colleague Keith, in our SFU chemistry department, one of the most innovative chemists practicing his craft today. Keith is a master woodworker, who built his own home with his own hands in his spare time, and creates bowls from tree trunks that sing with the fallen tree's spirit. The sense of physical structure that he expresses through woodworking is tangible; sometimes I can see a piece of wood in his mind being formed and molded, even before he takes the lumber in hand to actually work it.

Keith also is a brilliant chemist, and when he talks about novel molecules and structures, it is with the same sense of structure that he applies to his woodworking. I have no doubt that the woodworking and chemistry regions of his brain are connected, and that his sense of wood is a vital and necessary part of the innovations he brings to his chemistry. If Keith had stayed in the chemistry laboratory late every evening instead of going home and working at his lathe, would he have been such a creative chemist? If his weekends were taken up with reading every chemistry article he could find, instead of framing a home, would he have become an innovator? I doubt it.

Another interesting aspect of innovation is how important tedium and repetition can be to free up the mind to make new connections. Long days in the beeyard are ideal for novel thinking. The tedium of opening hives, inspecting frames, looking for queens, and hefting supers soon settles into the relaxing rhythm of hard work, a rhythm that seems to free the barriers in our minds that prevent connections from being made in innovative ways. Think about how many of your best ideas came while jogging, bicycling, splitting wood, or beekeeping, at times when the channeled, goal-driven thoughts that make up most of our days give way to random associations and unusual connections between the different things that we are capable of thinking about. It's not surprising that beekeepers tend to be innovative, because we spend much of our time engrossed in activities that allow room to think in these free-form, creative ways.

Innovation can't be forced, and if you sit down at your desk and decide that you will come up with an innovative idea in the next five minutes, it simply won't happen. Rather, we need to train ourselves to be receptive to idle thoughts, and create a mental environment that allows free association rather than structured, linear thinking. Next time you're in the beeyard, give it a try. Relax, feel rather than intellectualize your bees, and at the same time let thoughts about your family, your church group or your hobby rattle through your mind. Bring into your brain a television show you saw the night before, a book you just finished reading, a stimulating discussion you had with a friend. Whatever comes to mind, go with it; there's time enough to refine your ideas with careful logic once something new has popped into your mind.

For those of us who teach, we can build this ability into our students by doing the same thing in class. Ask the unusual question, shock your students with a provocative idea, draw out their personal lives and interests during discussion, and then connect it with your teaching. For example: I recently taught a course called "Biology and Society," in which the students and I read and discussed books on environmental issues. Right in the middle of one somewhat boring discussion about biodiversity, I asked the students if they thought the author of the book we were discussing believed in God. That led to a fascinating discussion about the students' ethical and religious beliefs and the responsibilities that humans have or don't have toward nature. Another example: One day I divided the class into two role-playing groups, one favoring the lumbering industry and the other made up of conservationists opposing logging. That role-playing exercise was interesting, but then we did something that was *really* interesting: I asked the students suddenly to switch roles; the loggers became the conservationists, and vice versa. The mental confusion created by this sudden switch led to a much deeper and intuitive understanding of each side's position, and helped the students to move from the black and white of confrontation into the gray area where real life is lived.

There is no human act that is more compelling or more uplifting than the act of creating something new. Innovation ultimately is an act of faith in the possibility of human progress, and an expression of a belief that we can improve ourselves and the world around us. The ability to create new things consciously is one of the unique aspects of our humanity, and doing something new, one of the great pleasures of being human. So sit back, let the thoughts cascade through your brain, and think about ideas that can only come from yourself, a mix of your unique experiences, talents and interests. You'll be doing something quintessentially human, but perhaps with a small spark of the innovative. BC

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

?DO YOU KNOW?

A Potpourri Of Bees, and Bee Things

Clarence Collison
Mississippi State University

During Winter, beekeepers are concerned with handling and marketing their hive products as well as planning and preparing for the up-coming season. Of primary concern is having sufficient equipment and colony numbers. Many factors affect colony survival, strength and development, especially in early spring. By understanding these factors and knowing basic bee biology, the beekeeper will be able to better evaluate colony conditions and develop appropriate management strategies. While the timing of basic Spring management practices will vary from one geographical region to another, beekeepers will use the same criteria in determining colony needs and perform similar hive manipulations.

Please take a few minutes and answer the following questions to find out how well you understand these important topics.

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

1. ___ Melted beeswax is heavier than water.
2. ___ Honey is a super-saturated solution of sugars.
3. ___ Water is a vital element in the honey bee diet.
4. ___ Hatching of the honey bee egg involves the rupturing of the egg membrane (chorion).
5. ___ Honeydew is produced by extrafloral nectaries.
6. ___ From the time of queen loss until workers begin laying eggs occurs faster in African races in comparison to European races.
7. ___ Dandelions produce both nectar and pollen.
8. ___ Various species and varieties of citrus produce copious amounts of nectar but do not require insect pollination.
9. ___ Beekeepers should not allow colonies to get down to less than 10 to 15 pounds of honey.
10. ___ Fresh pollen and nectar in the Spring serves as a strong stimulus for brood rearing in a honey bee colony.

Multiple Choice Questions

11. ___ Measures the moisture content of honey.
    A) Polariscope
    B) Pfund Grader
    C) Brix Hydrometer
    D) Refractometer
    E) Hygroscopicity Meter
12. ___ Developed the process for making creamed or finely crystallized honey.
    A) E. J. Anderson
    B) W. L. Coggshall
    C) E. C. Martin
    D) J. W. White, Jr.
    E) E. J. Dyce
13. ___ Two pheromones known to signal danger and puts workers on the defensive.
    A) (E)-9-oxo-2-decenoic acid
    B) 2-Heptanone
    C) (E)-9-Hydroxy-2-decenoic acid
    D) Nassanoff Pheromone
    E) Isopentyl Acetate
14. Honey is classified into seven color designations. What are the official color classes? (7 points)
15. What is the only fumigant recommended for wax moth control in comb honey for human consumption? (1 point)
16. What honey bee medication is recommended to be administered in sugar syrup? (1 point)
17. Please explain why honey and beeswax should never be heated with a direct source of heat. (2 points).

ANSWERS ON PAGE 47

400,000,000 pounds by 2002

THE HONEY BOARD'S PLAN

Growth and Competitiveness are The Key Parts of this Strategy

Bob Smith

The National Honey Board is embarking on a new course to "futurize" the image of honey and give consumers and food manufacturers new reasons to use more.

At its Fall meeting in Phoenix, the 13-member board approved components of a new strategic plan to fuel an industrywide increase in domestic consumption of honey to 400 million pounds by the year 2002.

"The plan is designed to facilitate industry growth and competitiveness so supply literally chases demand," board chairman John Miller told members of the board.

"The train is coming, and we better be on it," he said, referring to the analysis of market trends research, which has driven the planning process from its initiation. Market trends research uncovered some key consumer interests – an increase in health-conscious consumers, mainstream use of natural and self-help alternative health remedies, and growing interest in natural elements found in some foods that protect against disease.

The Honey Board spent the better part of a year scrutinizing market trends for opportunities to grow the honey industry, clarifying the honey industry's niche, assessing board strengths and weaknesses, and crafting a vision for the future.

The board worked from a trends database, beginning with the identification of critical issues drawn from an industry issues workshop last year. It expanded its base with trends collected from *Food Forecast*, a collaboration between Nuffer, Smith, Tucker, Inc., and the California Institute of Food & Agricultural Research at the University of California, Davis. *Food Forecast* monitors 15 databases across 22 issues likely to impact the agricultural food chain. A blue ribbon panel assembles twice a year to turn mounds of data into market intelligence. The board used this market intelligence to draw implications and prioritize potential threats and opportunities facing the honey industry.

Three areas of focus have evolved as strategic priorities in the drive to close the gap on the 400-million-pound benchmark:

1. Facilitate widespread use of honey to promote health;
2. Enhance the competitiveness of industry segments through partnerships with the National Honey Board;
3. Support existing traditional (current) honey users.

The Honey Board's plan is to aggressively investigate the potential for industry sales growth in non-traditional markets and non-food areas while holding onto honey's traditional honey user. The current rise in health-consciousness, the new science indicating food's protective elements (i.e., nutraceuticals), and the number of industries looking for more natural health-promoting, healing or nostalgic ingredients are opportunities which may dwarf today's honey market.

Honey's heritage as a medicinal remedy, with both food and non-food uses, falls naturally into these evolving market trends. "Going back to the future," in the words of chairman Miller.

Each of the areas of focus in the strategic plan deserves more elaboration.

PROMOTE HEALTH

Three issues intersect to make this a significant opportunity for a contemporary positioning strategy for honey:

1. **Do-it-yourself health**

   Consumers continue to take on more responsibility for their own well-being, leaving traditional health institutions for serious illness. This, in part, means trying alternative treatment (e.g., chiropractic, acupuncture, massage). Last year, nearly one-third of all Americans visited an alternative health-care practitioner – 37 million more than those seeing a physician. Do-it-yourself health care is also sold at retail in the form of self-help devices, over-the-counter medications, supplements and natural remedies and health-enhancing foods. The average consumer spends $81 a year on these products; by the year 2000, she'll spend $120.

   The National Institutes of Health is funding research on alternative treatments at leading universities and medical centers, while traditional managed care is integrating alternative treatments into its menu of services. One survey of national health maintenance organizations finds 58 percent plan to offer alternative care therapy by next year.

   Honey Board consumer uses and attitudes studies show that 40 percent of those using honey are doing so for health reasons.

2. Resurgence of folk remedies

Evolving out of the do-it-yourself health movement comes a renewed interest in folk medicine and medicinal approaches, fueled by this search for alternative treatments and a sentiment that "if it worked for our ancestors, why not let it work for us now?" Foods and plants are being studied for their "natural" health properties and how they act as pharmacological agents in the body.

"Food folk tales are not just fairy tales," said David Kritchevsky, Ph.D., of the Wistar Institute, a prominent research group. Building on scientific investigation of folk remedies is Dr. Stephen Rinnard of the University of Nebraska Medical Center, who said, "There's a large, worldwide, therapeutic tradition of recipes, local plants and animals. Modern medicine tends to ignore traditional medicine even though it includes potent remedies."

Research on honey's role as an anti-bacterial agent, burn remedy, ulcer/digestion medication, laxative and wound healer is critical to capitalizing on this trend. A parallel is the food industry's search for more natural effective ingredients.

3. Good-for-you foods

Survey after survey ranks the health attributes of foods as highly as taste and convenience – it's another way consumers can take control of their lives. We often hear skepticism voiced about whether or not people practice what they preach. Honey Board research shows that consumers continue to seek out foods they think are good for them (or at least not bad for them). They might behave inconsistently from a health perspective (e.g., selecting low-salt chips but not eating five servings of produce a day), but they're doing the best they can in an incredibly confusing marketplace. Consumers also practice trade-offs – consuming a light meal now so they can enjoy Haägen Dazs later.

The board's analysis of market trends shows this good-for-you niche expands beyond nutrition, primarily among upper-income baby boomers, to other benefits driven by shared values connected to health: fresh, wholesome, natural, quality, safe, green, even spiritual benefits. We're finding companies, even grocery chains, creating value-added product lines servicing this growing niche of consumers. They set their own market-driven quality standards, which far exceed anything set by government.

Increasing amounts of scientific research are focusing on the specific elements in food which help prevent diseases like heart disease and cancer or support a healthy immune system (i.e., phytochemicals).

Honey's historical positioning as a natural, pure, health food with trace amounts of vitamins and minerals and well-known phytochemicals could be a value-added opportunity.

"The only sustainable competitive advantage in an era of continuous change is the ability to anticipate change and capitalize on it ahead of your competitors."

The links between these three issues connect to make the phenomenon all the more powerful as a market force. As these issues continue to unfold, it is to the industry's advantage to have a well-thought-out strategy to position honey as a protective food, if not the *only* protective sweetener.

Board staff are in the process of: a) collecting and analyzing secondary research to see how far we can take this positioning strategy with the data that currently exists; b) identifying areas where further research could strengthen honey's position (e.g., What is honey's protective phytochemical profile?); c) researching new target audiences likely to respond to the health positioning; d) consumer-testing the positioning for its ability to move product; e) identifying third parties to help advance the positioning with new target audiences; and f) determining the most effective marketing tactics.

While it's easy to "talk the talk," we want to make sure we can also "walk the walk" in a credible way.

In addition to creating messages to target consumers, the board will be identifying ways it can stimulate new product development in growth markets. We are continuing efforts to identify them and prioritize product categories with the most potential for increasing the use of honey ingredients in new products.

Food and beverage makers are looking for suppliers to provide them with label-friendly ingredients and additives that consumers perceive to be natural and nutritious. There are also non-food opportunities for honey with dietary supplements, cosmetics and pet foods.

We are investigating expanding the health strategy to new product development. Major food, pharmaceutical and biotech companies are spending billions of dollars in research and development in designing foods with protective health factors.

Food companies include well-established, successful names such as Nabisco, Quaker Oats, General Mills and Pillsbury. Campbell Soup Co. has its Center for Nutrition and Wellness, dedicated to marketing new health and nutrition initiatives. Kellogg has its functional foods division and is opening the W.K. Kellogg Institute for Food and Nutritional Research.

Says Kellogg Chairman and CEO Arnold Langbo, "Just as we have made long-term commitments to emerging markets, such as India and China, we are investing in the long-term potential of functional foods as an emerging food category."

Facilitating the use of honey as an ingredient in manufactured foods is a major industry growth opportunity.

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HONEY BOARD ... Cont. From Pg. 21

NHB PARTNERSHIPS

Keeping the industry abreast of the monumental changes occurring in the marketplace is the gist behind this priority. We'll set up a market intelligence system to anticipate and prioritize competitive issues likely to impact the industry. We'll act as a clearinghouse for the industry to learn about new market trends and provide tools to capitalize on opportunitites and redirect potential threats.

SUPPORT TRADITIONAL HONEY USERS

We are currently scrutinizing existing promotion programs to make room for these new growth priorities. While the board's strategic plan calls for expanding honey's impact, there is no corresponding increase in budget. The burden is on the Honey Board to maximize honey's impact with more powerful strategies and greater efficiencies. Each program is undergoing a cost-benefit screen (as will all new programs) with the key criteria being, where can we make the biggest difference in facilitating industry growth to the 400-million-pound benchmark? Traditional honey users continue to be a priority audience, the burden is on staff to make recommendations to the board on how best to reach them.

The only sustainable competitive advantage in an era of continuous change is the ability to anticipate change and capitalize on it ahead of your competitors. The Honey Board is committed, through its strategic planning process, to uncovering new opportunities and providing industry the tools to be competitive in the 21st century. BC

Bob Smith is the Executive Director of The National Honey Board.

BRING BEEKEEPING TO THE PUBLIC

"Get the beekeeping message to the public, build membership in your association, and increase the number of beekeepers in your area."

David Calderone

Whether your association is organized on a local level or on a state level, you can imcrease your membership ranks by bringing beekeeping to the general public. A well kept secret about the general public is the fact that many of them have a latent interest in beekeeping. All these people need is an exposure to beekeeping to raise their interest to the next level – the level to actively pursue getting started. Is this the way you were introduced to beekeeping? Unofficial statistics indicate that many of your fellow beekeepers were introduced to beekeeping by another beekeeper.

But bringing beekeeping to the public is not easy. It takes a commitment from you to get out into the world and expose the joys and values of beekeeping. All beekeeping organizations should include in their mission statement, "The promotion and expansion of beekeeping through an aggressive program of educational activities." Beekeepers have long been looked upon by the public as a solitary group, several members of the Capital Area Beekeepers Association are attempting to reverse this opinion.

The Capital Area Beekeepers Association (CABA) is located in the Harrisburg area of Pennsylvania and serves the five contiguous counties. Currently there are 114 members. However, it wasn't always this way. In 1990, the membership was less than 30, and CABA had limited exposure to the general public. A change in leadership was made, a new and expanded executive board was assembled, and a new direction for association programs and activities was initiated.

The planning of meaningful CABA meeting programs and advertising these meetings was the first order of business. Programs highlighted timely topics and knowledgeable and entertaining presenters. Next was the expansion of CABA's fledgling short course in basic beekeeping, started three years earlier. The course outline was re-formatted to include applicable topics for new beekeepers, and the course faculty was expanded to include a mix of experienced local beekeepers, entomologists, state bee inspectors, and cooperative extension specialists. These two improvements, along with a periodic newsletter, have contributed to the growth, not only in membership, but more importantly in the number of local and statewide beekeepers. The growth in credibility and popularity of the short course is recognized by its continually increasing attendance by local, state, and out-of-state beekeepers.

A beekeeping organization must seize every opportunity to promote beekeeping. In 1992, the Pennsylvania Farm Show began a program to celebrate the products of Pennsylvania by including commodity presentations during farm show week in January. The PA State Farm Show is possibly the largest off-season agricultural extravaganza in the country with the purpose of showcasing the products grown, raised, and harvested by Pennsylvania's farmers and agricultural commodity groups, which range from livestock and dairy to apples, potatoes, and honey. CABA eagerly undertook the honey promotion program, on behalf of the Pennsylvania State Beekeepers Association. For the last five years, this activity has allowed beekeepers to promote the quality of honey and its value in our daily diet, and, at the same time, to take the opportunity to expose the joy and value of beekeeping. Beekeepers should be proud of what they do and should be unselfish in passing on their beekeeping skills to others.

The 1997 Farm Show offered a

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"If beekeeping and beekeeping organizations are to prosper and expand, it will take the iniative, commitment, and hard work of everyone in the group to attract new people."

THE PUBLIC ... Cont. From Pg. 23

new event for the public's education and enjoyment. The first ever "Beekeeping Adventure" program was offered to promote beekeeping and raise the public's awareness of the importance of the honey bee and its impact on agriculture and the food industry. This marks the first time in farm show history that the honey bee was recognized for its importance in those areas. Up to this time, only the commodity of honey was considered for exhibition and promotion. Here again, CABA seized the opportunity to extol the virtues of beekeeping to the general public.

This all started back during the 1995 farm show, when Stu Mathias and David Calderone were talking with James Welshans, then director, Dauphin County Cooperative Extension, about more farm show exposure for beekeeping. Jim suggested the idea, and the mini-beekeeping short course was born. But it took two years to get the program to the farm show. The first presentation of this program was to have been during the 1996 show, but the blizzard of '96, which almost shut down the show, forced postponement of the program until 1997.

So on a Monday evening in January 1997, six members of the Capital Area Beekeepers Association gathered in the family corner of the farm show complex to present the first ever "Beekeeping Adventure." The program was patterned after the association's successful short course in basic beekeeping. Apiary Inspector Jim Steinhauer, and Tracey Helton, regional apiary inspector, Pennsylvania Department of Agriculture, also participated in the program.

The farm show press office provided plenty of advance publicity and the Harrisburg newspaper (*Patriot-News*) included the announcement several times with other farm show news. The advertising paid off. Tom Imswiler, Family Corner Director, reported receiving several telephone calls from persons interested in the program. So, we were optimistic and ready to put on the show.

As show time approached, and the presenters were setting up the demonstration materials, along came a crew from the Pennsylvania Cable Network (PCN). It seems that they had decided to tape the "Beekeeping Adventure" program for broadcast over the public access channel. PCN recorded the entire one-hour program and subsequently broadcast it several times over the following days. This was certainly a plus for beekeeping. Even though the audience filled all of the available seating (about 250), the television broadcast exposed hundreds or even thousands more to beekeeping. Those members who participated in the program soon found out that the public does watch PCN. In the days following the first broadcast, persons attending the farm show took time to mention that they had watched us on television, and thought the program was informative and well-presented – a tribute to the participants.

The association was asked to return to the 1998 Farm Show to repeat the "Beekeeping Adventure" program, and we agreed. Bringing beekeeping to the public, in an educational way, serves to fulfill the mission of our association, which is . . . "To foster the promotion and expansion of beekeeping through an aggressive program of educational activities."

Following the "Beekeeping Adventure" program, CABA received inquiries from 36 people interested in becoming beekeepers. From this group, 14 attended the 1997 edition of CABA's short course in basic beekeeping. Hopefully, the others have found time to fulfill their latent desire to become beekeepers and have obtained some basic training. (The 1997 edition of the short course was attended by 38 new beekeepers, the largest attendance to date. In its 10 years, the short course has introduced over 160 people to the basics of bee biology, management, and equipment.)

This article, about a small success for one organization, is presented so that other organizations may also become successful. Not every beekeeping association is successful, as evidenced by the number of existing but inactive organizations in Pennsylvania and across the country. If beekeeping and beekeeping organizations are to prosper and expand, it will take the initiative, commitment, and hard work of everyone in the group to attract new people. The success of one organization can be the success of another, if only one member can be moved to encourage other members to get active in promoting beekeeping.

So what's it going to be? More of the sit-back-and-do-nothing-but-complain posture? Or, start to take a proactive posture to expand beekeeping and promote and support activities which bring factual, timely, and quality beekeeping and honey information to the public? Open your association meetings to the public; invite experienced, knowledgeable, and entertaining speakers to your meetings; organize a short course for your members and invite the public; and take opportunities at local, regional, and state fairs or other agricultural events to promote beekeeping. The future of your association, yes, even beekeeping depends on your attitude *and subsequent action.* Will you continue to be a keeper of bees or will you become a promoter and advocate for beekeeping? BC

David Calderone has been president of CABA since 1990, and holds several committee positions with the Pennsylvania State Beekeepers Association.

"The success of one organization can be the success of another, even if only one member can be moved to encourage other members to get active in promoting beekeeping."

Thinking Outside The Box

The Changing Face of Honey Consumers

Elizabeth Sloan and Buzz Phillips

Fewer home-cooked meals, more kids and healthier eating

The California beekeepers sponsored a day-long symposium on preparing for the future at their annual meeting last November. The symposium was put together by The National Honey Board and featured four speakers and a planning workshop that included everyone in attendance – all 200 or so in the room.

The speakers were Edward Barlow Jr., a strategic planning consultant, facilitator for many groups and a dynamic speaker; Dr. Elizabeth Sloan, president of a company that tracks trends for food, pharmaceutical and supplement marketers and a former director of the Good Housekeeping Institute; Dr. John Nichols, associate head of research in the Department of Agriculture Economics at Texas A&M. His specialty is food marketing and policy. Closing the morning's session was Mary Humann from the Honey Board. Besides the decade she has spent on the board as marketing director, she works with the advertising, public relations and market research programs of the board.

Each speaker covered his or her respective specialty and when all were done, the audience had an overview of the future in general and of the direction in which food policy would be heading, more specifically, the direction in which the population would be going relative to food choices, demographics and income. Finally, they were shown where the Honey Board was headed, based on the information presented by the first three speakers.

The task of the entire audience, then, was to use this information to select the most critical issues that the beekeeping industry must address if it is to effectively position itself for the future. Certainly there was more than one 'critical' issue on the minds of the many people in the audience – which included packers, honey producers, hobbyists, queen and package producers, scientists, equipment manufacturers and others. In fact, after a boisterous session, the list of 'critical' issues was *boiled down* to 15 or 16.

Using this list, Ed Barlow assigned each of these issues to a group of 10 or so in the audience (there were 10 people at a table). The group's assignment, addressing only one of these issues, was sevenfold. First they had to further define the issue, that is, identify the elements within the issue so they understood it better. Second, listing the implications of the issue, they had to find the nightmares/challenges, dreams/opportunities of the issue. Next, they needed to find strategies to avoid the nightmares and make the dreams come true. From these, they had to select the three best strategies to be pursued in the next three years. Then, from these three they selected the one that had the most timely impact on them to be implemented within the next six months.

They were then asked what they thought the Honey Board could do to be supportive in implementing the three strategies listed above. And finally, each group was asked to write a *USA Today* newspaper headline reflecting the successful implementation of a strategy listed above.

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The Honey Board's goal for this symposium is far greater than simply to enlighten those in attendance. They are putting together an interactive workbook, using the identical information first presented, that groups everywhere can use to produce the answers to the future that fit their specific situation. The book will contain the same (or updated) information as presented at the symposium, plus other, pertinent facts, figures and information.

Bee Culture will, over the next few months, present the information that was available at the symposium. Each speaker's segment will be explored from the presenter's point of view with a short summary at the end. Readers will also have insights into how this information can be used as a steppingstone to the future.

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The first of these is the information presented by Dr. Elizabeth Sloan on "Consumers, Food and Health." Her presentation included slides which contained many, many graphs and charts. To convey her style we've chosen to use a stream-of-information format similar to what you'd 'see,' if you were attending.

- Only 55% of dinners contain at least one homemade item vs. 64% 10 years ago.
- Ideal food prep time is 15 minutes; less than five minutes by 2030.
- Only 1/3 of women over the age of 20 bake for fun, even once a year.
- 75% don't know what's for dinner at 4 p.m.
- Three-quarters of U.S. kids don't know how to cook.
- 1/3 of all workers work 10 hours/day.
- The average worker doesn't do lunch.
- In 1995, restaurant sales were greater than supermarket sales.

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THE BOX ... Cont. From Pg. 25

- Home meal replacement - $95.8 billion in '95; $108 billion in 1996.
- Carryout meals: 48/year/person in 1965; 65/year/person in 1996.
- 1987 - 740 meals/year consumed at home; 1997 - *same*, but *source* has changed.
- Sources include: Fast food, 41%; restaurant, 21%; supermarket takeout, 22%; all other, 16%.
- There has been a 24% increase in fast-food breakfasts in last five years.
- Indulgence market $53.86 billion in 1996.
  - snacks - $10.9 billion
  - in store - $11.4 billion
  - candy/gum - $12.1 billion
  - frozen baked goods - $1.5 billion
  - sweet baked goods - $4.3 billion
  - crackers, cookies - $5.9 billion
  - ice cream, frozen yogurt - $7.0 billion
- Regular "snacks" are a $49 billion market.
  - 90% of U.S. population snacks
  - 5% at least 2-3/day
- 59 million kids under 14 by 2000
- 4 of 5 eat candy everyday
- 39.8 million teens by 2000.
- Emerging ethnic markets:
  - 72% Pacific rim
  - 10% Caribbean basin
  - 18% Mediterranean rim
- Nutrition interest rises with age:
  - <24years - 43%
  - 25-39 - 49%
  - 40-49 - 60%
  - 50-64 - 67%
  - 65+ - 59%
- Adult 'supplement' uses up 21% (vitamins)
  - 1990 - 35%; 1997 - 56%
- At mass market outlets, growth sales:
  - vitamins up 12.3%
  - soup up 7.3%
  - candy/gum up 6.5%
  - milk up 6.5%
- Health food sales increases by market:
  - national/health food stores, up 20.3% to $6.1 billion
  - health food chains, up 25.4% to $1.27 billion
  - Mass market, up 22%, to $1.78 billion
- Growing importance of "Natural" on product labels and products:
  - 63% of shoppers sought out "natural"
  - 52% more likely to buy "all natural" products
  - 25% will pay more for "natural" products
- Most desirable food label claim:
  - fresh - 72%
  - low-fat - 62%
  - fat-free - 61%
  - cholesterol-free - 52%
- Organic produce sales:
  - $0.5 billion in 1989; $2.3 billion in 1994

Nutraceutical – A food that confers health or medical benefits by the addition of health-promoting ingredients or the elimination of unhealthy substances.

- 55% of food, 36% of pharmaceutical and 90% of biotech industries are conducting nutraceutical R & D.
- U.S. nutraceutical market:
  - meals/snacks - $49 billion
  - diet/fiber aids - $825 million
  - sports, fortified beverages - $22.5 billion
- Honey's "nutrient" profile:
  - vitamins - C & B6, thiamin, riboflavin, niacin
  - trace minerals - Ca, Cu, Fe, B, Zn, Na, K, P, Mn, Mg, F.
  - amino acids - 18
- Honey's anti-oxidant properties:
  - prevents aging, cancer, heart disease, more
  - darker have stronger anti-oxidants
  - "herbal" honeys more than "normal" honey
  - propolis strong anti-oxidant
  - Pinocembrin flavonoid compound, average concentration 10%
- Alternative medicine goes mainstream:
  - 425 million trips to alternative therapists
  - 388 million to regular doctors
  - $13.7 billion industry
- Honey's anti-microbial properties:
  - effective against some of today's most virulent microorganisms - *S. aureus* and *E. coli* among them
- Honey promotes wound healing
- Honey and burns:
  - superior to other dressings (when sterilized)
  - cost-effective
  - wounds heal more rapidly
- Honey active against peptic ulcers, a $1.5 billion OTC market
- Honey advantageous sweetening agent for diabetics
  - incidence of diabetes up 50% since 1958
  - produces smaller rise in blood glucose levels

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The implications from this presentation, relative to future markets for honey, are obvious for a forward-looking seller.

Fewer meals are being prepared at home and those that are, are in large part already partially prepared. Where does honey fit in here?

Snack food sales are increasing. Does honey have a role, an expanding role, or a commanding role in the future of snack foods? Kids, too, are eating more sweets, and there are increasing numbers of them. How does that fit in?

Consumers' interest in 'good-for-you' foods is increasing in both awareness and consumption. Honey, it can be argued, is one of these because it contains small amounts of vitamins and minerals and the more important anti-oxidants. Even hobby and sideline sellers can take advantage of this information when selling or promoting honey.

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Next, we'll look at the future of food production and distribution, marketing honey in this changing environment, an overview of the future and what you can expect – and how to take advantage of that knowledge.

Beekeeping On The Fringe, With
Ed & Dee Lusby

Kim Flottum

Dee and Ed Lusby are fringe people. They live in Tucson, Arizona, but they keep bees in places most people wouldn't; their management style works, but requires a lot of labor and attention; and they've taken on a biological puzzle that may or may not provide answers to a bunch of honey bee problems.

The Lusbys run a small commercial operation with about 250 colonies at the moment. . . . That rather low number is the result of strong culling, colony loss from mites, and a several-year significant drought.

"We used to run over 600 colonies, and if the weather breaks and our new management scheme (see box) works the way we think it will, we'll be back to over 600 or 700 by the Fall of '98," Dee told me while we were bouncing down a washboard road heading to an isolated beeyard in the Kit Peak area outside Tucson. We'd gone down back roads, then back trails, through gates locked to keep out people not belonging on the King Ranch land we were on, and finally on wagon tracks and over riverbeds that only coyotes, lizards and honey bees could find.

Dee and Ed Lusby, from Tucson, AZ, keep bees in the Desert Southwest.

The Lusbys produce honey, raise queens, and make splits in this by turns incredibly hostile and wonderfully abundant land. The extremes make or break anyone who takes on the natural order. The Lusbys, as stated above, live on this fringe.

Keeping bees in the Desert Southwest requires using a calendar different from the one followed by most beekeepers in the United States.

Early January is the beginning of the active time. By the end of the month, brooding up is in full swing, and comb whitening is taking place by the middle of February. When this starts, supers are added – the second or third brood chamber. For colonies with three supers, when the third is 50 percent full of brood, a piggyback split is made. So by the end of March, these strong colonies have been split, and by April, they have been requeened and separated to their own stand.

After April, all colonies are supered as needed. Beeyards are visited about once every three weeks, and supers are added all Summer. Colonies are evened out as needed during the Summer.

About the first of May, full honey supers are pulled to extract, but the flow is over by about mid-July. This dearth lasts until about mid-August in a good year, or early October in a bad year.

Supering starts again with the honey flow and continues until about Thanksgiving – supering, harvesting, and supering

again. When the Fall flow is over, Fall divides are made, piggyback style, from the strongest colonies, and queens are raised from mid-October to about the first of December. From then until January, colonies are only maintained, and then the process starts all over.

Honey production in the area is modest by some standards, with, on average, 10 colonies producing a barrel of honey in a year. Drought years can mean that over 20 colonies are needed to produce that 600 plus pounds.

A piggyback split is made by separating the top box of a three-story colony (or a very strong two-story colony) with an excluder or division screen. Then the top is requeened, or the old queen is moved up and the bottom is requeened. Since a growing colony 'tends' to have a queen moving up, the queen is often in the top box – but not always. These splits are made about the middle of October and the middle of March, depending on the season, colony strength and honey flows.

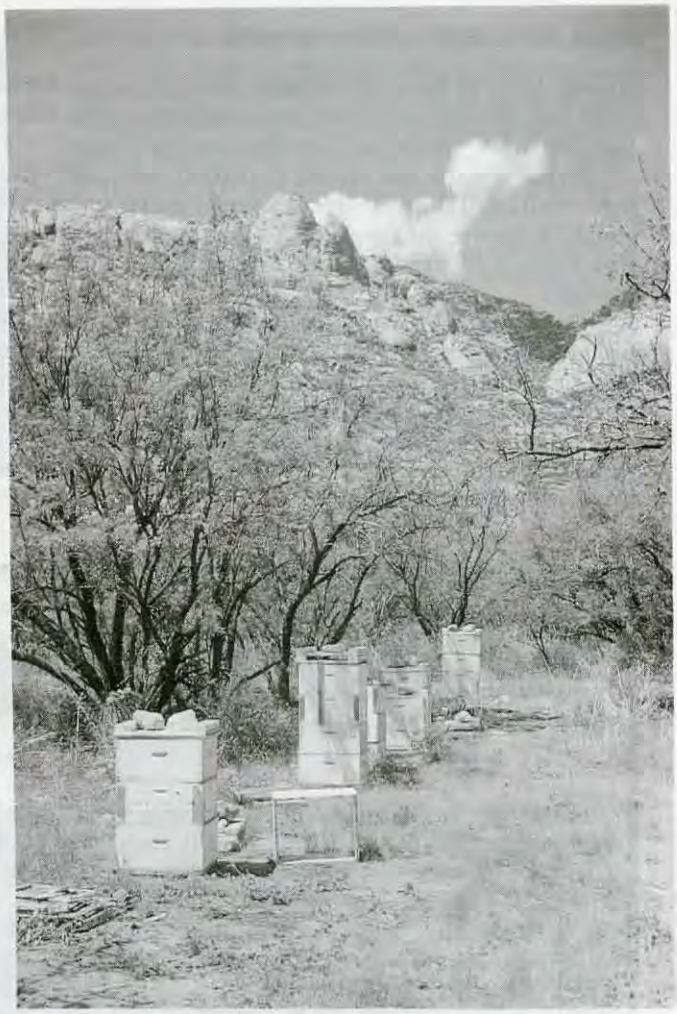
Unlike the Hines operation (see article on page 33), Africanized Honey Bees seem not to have caused the management problems common to the region. Opening colonies in a couple of yards showed no apparent excessive defensiveness. Most were worked without veils. The Lusbys had no explanation for this, even considering the fact that the first yard we visited was alongside a mountain range that feral swarms followed north from Mexico into Arizona.

The Lusbys raise their own queens, and follow a fairly typical technique, though their selection criteria are unique to their operation and needs. Basically, they select breeder queens for honey production, no brace comb production, gentleness and 'health.'

Once a breeder is selected, frames of day-old larvae are pulled and grafted into Kelley wax cell cups. "We use Kelleys because they tend to be smaller, about 5/16-inch rather than the larger 3/8-inch," Dee said. "This ties in with our bee-size (see box) operation," she added.

Cups are primed with royal jelly before grafting because of the arid climate, and grafts are done every three days. Bars containing 60 to 120 cells are moved into cell builders at the home yard right in town, then moved after four days into one of three incubators, which are in constant use during the season, to finish.

Finished queens emerge, and the virgins are captured in a bottle, the cell cup acting as the bottle top.



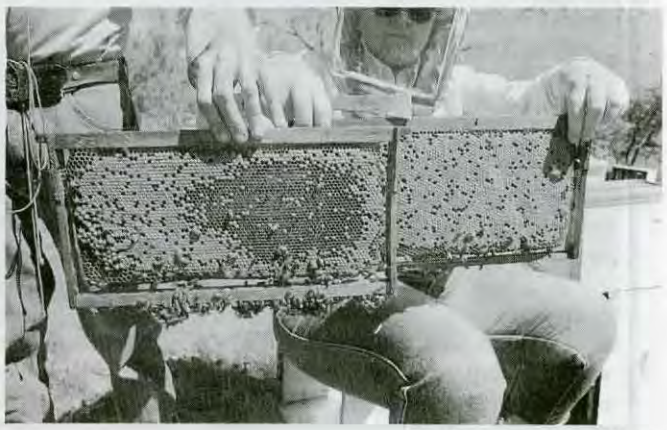
View of a typical beeyard near the mountains – hot, dry and distant.

Honey is added for food, and bottles are changed when soiled.

Queen selection begins by appearance only, even before introduction into a colony. In the first 12 hours after emergence, her color and banding appear. Size, too, is beginning to be obvious. The Lusbys select immediately for small, black queens, with long red legs and wings longer than the abdomen. "Average-sized

The Lusbys select for queens that produce wall-to-wall brood patterns. Not *u-shaped patterns.*

The only 'medication' the Lusbys use is a sugar, vegetable shortening and propolis patty.



Continued on Next Page

ED & DEE LUSBY ... Cont. From Pg. 29

queens tend to be more variable than the ones we select," Ed pointed out, "and our experience has shown that those we choose at first tend to work best."

Virgin queens are placed in mating nucs and open-mate with local drones – source pretty much unknown – which, it seems, has worked so far relative to progeny. But Tucson is pretty much Africanized, so this may change.

Once mated, new-queen nucs are evaluated for brood patterns before being introduced to a new colony. Half-moon patterns are not acceptable since the Lusbys want a wall-to-wall pattern, which produces more brood in a colony. "We need fast, fast buildup to react to a rapidly changing environment," Dee says, "and the more brood the faster, the better."

Once a queen is selected, she's introduced to a colony. Introduction works like this: A colony, recently made queenless, or a split without a queen, is smoked at the bottom until smoke comes out the top. The queen is then direct-released into the center of the colony. Supers are lifted, and she's popped out of her cage. Or, she's released right on top. This technique results in an 80 to 90 percent take, which is enough, so far, for the operation.

Until mites came on the scene, this management program worked for the Lusbys. But mites, and the problems associated with them, changed all that. And, even though the techniques haven't changed, the fundamentals of traditional management have been questioned by Dee and Ed, and found wanting.

The basic change in their philosophy has been the assumption made on the cell size of traditionally sold

NATURAL COMB

The Lusbys have, for several years, been investigating the ramifications of the cell size honey bees use. Their extensive research has turned up some interesting, and intriguing information.

Historically, man-made foundation started the same size as the size bees naturally produced. However, the cell size bees naturally produce is to some degree dependent on where in the world they are. Like many animals, those closer to the equator tend to be smaller than those closer to the poles. That is, honey bees in the southern U.S. naturally build cells a tiny bit smaller than bees in Canada. This discovery has complicated what is 'natural,' but not the fact that natural is still, well, natural.

Years ago beekeepers believed that larger bees would be better able to take advantage of flowers with the nectar deep within, normally out of reach of the bees' tongues. Long tongues were selected for, and some advantages were gained. However, larger bees were deemed the answer to even longer tongues, and to produce larger bees foundation with slightly larger cell base size, hence slightly larger (eventual) cells. It was believed bigger was better. Well, maybe, maybe not.

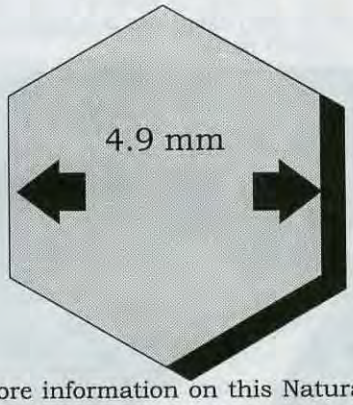
The Lusby's theorized that this larger cell size, and larger bee, produced an environmental stress on both individual bees, and the entire colony. Generally, colonies handle this subtle but persistent pressure with indiscernible outward signs. It is, however, difficult to measure because essentially all comb produced now is artificially large, at least to some degree.

Measuring cells produced by feral colonies in their part of Arizona, coupled with the results of their research led the Lusbys to initially produce foundation with a smaller-sized cell base on an experimental basis. Their first attempt was a cell base with a parallel-side-to-parallel-size measurement of 5.0 mm. (see diagram).

Since most foundation produced now is in the 5.22 mm to 5.55 mm range, reducing cell base size to 5.0, (a 4.3 - 10% reduction) seemed significant. But after a few trials the differences seemed minimal. Their time spent, however, continued to uncover more information supporting their belief that 'natural' cell size was better for bee stress reduction.

The 5.0 mm cell size did show promise, however. The Lusbys noted some reduction in parasite infestation and less incidence of disease. But not enough to be commercially economical, and colony losses continued.

The foundation made by the Tom mill produces cell bases that measure 4.9 mm from parallel side to parallel side.



For more information on this Natural Comb management technique, contact the Lusbys at 520-748-0542.

Rocks keep desert critters out more than wind protection. Some times the supers get nailed together with lath, just to keep them out.

foundation. That, plus their 'natural' treatment extender patties (propolis, sugar and vegetable shortening), have set them on a path of their own choosing. *Varroa*, some disease and tracheal mites have taken a heavy toll on their stock. But those left are thriving, and queens selected from these are thriving, too.

Traditional management schedules and non-traditional equipment *seem* to be making a difference in this operation. No chemicals whatsoever and selective breeding, along with some good luck with the weather, promise a bright future for the Lusbys and their on-the-fringe operation in the Desert Southwest. BC

It should be noted here that along with the inclusion of smaller cell-sized foundation in their management scheme, the Lusbys discontinued the use of all drugs, medications and acaricides, except a propolis, sugar and vegetable shortening combination in a patty. The early results were predictable – colony losses mounted, but not as rapidly as other, untreated colonies. Something was going on.

Further research indicated that, at their latitude, a cell size of 5.0 mm may have been 0.1 mm too large, and they found a cell size of 4.9 mm may be better. Precise measurements of feral comb supported the 4.9 mm size, so they began to search for a foundation mill to produce this size cell base. This wasn't an easy task. Not only were current manufacturers not using mills that small, most were reluctant to make a switch without some hard evidence the cost would be worthwhile.

One did, however. Tom Industries, in El Cajon, CA agreed to make a few small-sized mills, for a price, to see if they worked.

Lusby's make their foundation the old fashioned way, one sheet at a time. They dip a board in melted wax, let the wax cool and peel it off. One dip is enough. Then they run this through the hand powered mill. Result – eight sheets to the pound.

So far they've found that colonies on their new natural comb seem to swarm less (There is more space for brood – about 1250 more cells in a two-story chamber than using Duragilt.) and have fewer mites.

The few-mites thing, along with less disease incidence, has been aided by continual selection for tolerant colonies. But the two have worked. Independent sampling by USDA researchers have confirmed that, indeed, fewer mites than normal are present in these small-cell colonies.

So far the Lusbys have changed over most of their colonies. Their early observations indicate faster build up, healthier colonies and more honey production. But these are early results.

They are passionate in their belief that this management scheme is the answer to the stresses of desert beekeeping, both mites and whatever diseases their bees encounter. Others have changed, too, in their belief, but for the most part the jury is still out. Two, or better three seasons of continued success, without medications, will tell.

But for now, the Lusby's are busy switching from their old, too-big combs to the new, just-right foundation.

A sheet of 4.9 foundation. Wired only horizontally, the bees draw it out with no reluctance at all.

AFRICAN HONEY BEES AND LESTER HINES

Kim Flottum

We offer two views of beekeeping in Arizona this month. The first was the Lusbys, the second from Lester Hines, a commercial beekeeper who has learned to adapt his operations to accommodate the influence of the African honey bee in his area. He doesn't offer a beekeeping how-to, but rather a how-to keep bees in an African honey bee zone.

The African honey bee has had less impact on the Lusby operation, for some reason and they share their seasonal management schedule for making splits, harvesting honey and raising queens.

Combined, these two views offer insight into the effect African bees have had (and what to expect), and what southwest desert beekeeping can be like.

•

Lester Hines' deep bass voice immediately commands your attention, and his articulate and not-a-wasted-word style keeps your attention. Practiced and perfected by a career of teaching 7th and 8th graders, his message is easily understood. His experience as a commercial beekeeper and four years managing African bees makes that message even more meaningful.

Lester keeps his bees in areas of natural vegetation, not near any cultivated crops. If it rains, his production does well; if seasonal moisture is less than average, his production is cut short.

Lester's observations, after four years of dealing with African Honey Bees (AHB) are interesting, and generally consistent with those of others. He has, however, developed techniques to cope.

The AHBs' defensiveness is always evident, but can be extremely variable. They are runny – off combs, on side walls, out the front door, everywhere. When they are disturbed, they can explode, up and around the face and head. The venom odor in the air can be strong, and will get stronger the longer bees are in the air. And they are persistent, chasing and staying with an intruder.

Swarming, too, is variable. Swarm size is generally small – about the size of a quart jar or smaller. They move fast and will travel farther than European honey bees (EHB) swarms. Like EHBs, AHB swarms are *usually* gentle, having no home to defend. There are two distinct types of swarms. Reproductives move during the good season, when nectar and pollen are available. Absconding swarms occur during the Fall, Winter and early Spring, when food reserves run out. They leave looking for greener pastures.

It can be tricky hiving these swarms. Reproductives can have several queens; five or six is common. These swarms can be combined at night with some success, however. Requeening, of course, is difficult.

Queen cells are built with abandon when a colony is dequeened to be requeened. Twenty to 30 are common. Laying workers, too, develop rapidly, often in a week or less, producing full combs of drone brood. The colony quickly becomes demoralized and dies.

Nesting site preference is for smaller cavities than EHB, about 0.8 cubic feet. They use lots of propolis at nest entrances. Excessive swarming certainly lowers production, as

Continued on Next Page

Lester Hines, addressing the Western Apiculture Society meeting in Tucson last year.

To requeen a hot colony, Lester will separate a multi-story colony, putting each box on a flat surface so the bees can't run. While one box is examined, the other is covered. "Look on the wall behind the last comb," he says, "and that's where she'll be." Or, slip an excluder between boxes, and in a few days look for eggs. But there will be queen cells in the other box. Get them all or the new queen won't be accepted and it all starts again.

To improve queen acceptance, he uses pheromone inserts to reduce queen cell building. You can cage the old queen on a comb (providing you can find her), and introduce the new queen. Then check to make sure the new queen is doing O.K. and kill the old queen.

Once the new queen is accepted, however, within a week the temperament of the colony changes for the better. That's right – one week later you have a manageable colony. Requeening definitely pays.

Lester sums up AHB management simply by saying that anywhere (in his area) that EHB can survive, AHB can . . . and will. BC

HINES ... Cont. From Pg. 33

do small nesting cavities. Lester's main defense is to provide large enough 'nests,' and ample food during dearth periods. Two deeps usually forestall swarming. One certainly leads to it.

With adequate to excessive room and food during the off-season, AHBs will produce surplus honey and pollen, equal to or more than EHBs in the same location.

When nutritional shortages occur, brood problems increase significantly – chalkbrood, European foulbrood and stonebrood. American foulbrood is rare, but it's rare in Lester's operation anyway. Tracheal mites aren't a problem, but Lester has been selecting for strains with low, then lower infestation rates. He's in the seven percent range, at peak now, and finds no problems associated with these mites.

Interestingly, *Varroa* incidence is reduced as the typical characteristics of AHBs in a colony increase – to a point. Treatment is necessary to keep infested colonies going, but colonies with the fewest Varroa have the most tracheal mites.

Lester's techniques are standard and particularly successful. Use good protection – secure veils, gloves and suits. Use lots of smoke, but not too much. Keep jarring and vibrations to a minimum, and keep equipment tight. Extra entrances mean more guard bees.

Provide extra storage *before* they need it, paint and clip queens, and requeen as soon as possible when needed. Early Spring, when populations are low usually works best.

But requeening a colony with high AHB behavior is difficult. Queens, like the rest of the bees, run . . . everywhere.

Truckin' Bees

James E. Tew

Delivering bees by truck can result in truck-load-size problems, or profits.

My earliest memories of commercial beekeeping come from visiting some of the queen and package producers in South Alabama and Southwest Georgia. I'm not referring to some foggy event in the early 1900s, but only as far back as the early 1970s. Nearly every queen rearing book published in the U.S. will have spectacular photos of long rows of baby nucs or photos of cell building yards from some of these operations. Many of those businesses are gone now. At the time, I was so moved by the vista of bee hives and bee work going on everywhere that I offered to work for one of the commercial operations - full time. Showing experience and wisdom, the owner told me to stay in school, get a degree in entomology and then see how I felt about spending my life shaking packages. He was right. I never went back. I'm not lazy, but raising queens and shaking packages is hard work - but then again, what part of commercial beekeeping is not hard physical work?

Though much has changed since the 1970s in the package and queen production industry, some things are still exactly the same. The essential goal is still to get three pounds of bees, with a new queen that's confined in a separate cage, into a shipping package that includes a feeder can. Nail the whole conglomerate up and get as much money for it as is decent. Nothing has changed there.

Another thing that has not changed is the process of buying and hauling those packages. That continues to be an adventurous trip every time. But now that package prices are creeping upward and predaceous mites everywhere are trying to eat themselves out of hive and home, hauling packages is more important and more serious than it once was. In a recent article in this magazine, I discussed some of the issues faced by people hauling small loads of bees (see Smaller Hauler, December 1997). Bee wranglers who haul large loads of packages have exactly the same concerns as the beekeeper who only hauls a few packages - only the scale of the poten-

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TRUCKIN ... Cont. From Pg. 37

tial problems are much greater for the larger hauler.

Order early It doesn't matter if it's only a few packages or if it is a thousand packages, ordering early is now a requirement. "Order early" in comparison to what? Hardly ten years ago, packages could be ordered in late winter or even early spring by beekeepers in the northern-most parts of this country. That order time frame has been pushed back to September-October of the previous year - especially if it is a large order. Commercial package shakers can't buy from each other the way they once could to make up emergency orders. No one has any extra packages any more. Here's a short story from bygone years. I got a call in 1982 from a commercial package producer that had far more bees than he could sell. If I would pay for the wooden packages and feeder cans, he would give me the bees and haul them from the Southern United States to Cincinnati on another load he had coming to Ohio. This was all a donation to Ohio State, but I still got nearly 100 packages for the cost of the shipping crates (at the time about $2.50). In order to maintain production control, he was prepared to shake the bees out and suffocate them - or donate them to a university. Those days are gone.

Money is money Arrange for method of payment on the first call. Agreements vary widely, but for large orders, some down payment will be required. Frequently, the entire order must be paid for two weeks before shipping. Few producers ship COD. The actual form of funds transfer will also vary - check, money order or credit card. Clear that up early on. Some producers will allow orders to be split into smaller shipments in order to qualify for the quantity price break - if the entire order is paid for at one time.

If all parties agree, there are normally some package size options available to the bigger customer that may or may not be available to the smaller customer. In past years, two, three, four, or five pound packages have been available. In recent years, there has been increased reluctance to sell packages much larger than three pounds. This has been an effort by commercial producers to supply at least some "product" to all customers. Though five pounders have always been more expensive, in heavy nectar crop locations, the colonies build up much faster and provide for a heavier surplus. It's no secret to established commercial beekeepers that reusing last season's empty packages can save significant money. Why not? The truck is going down empty anyway. But bear in mind that package shaking cannot start until you get there with the empty packages. Some producers require customers who bring their own packages to arrive 48 hours before shipments are made.

Bulk Bees I haven't heard anything about "bulk bees" in many years. Essentially, the holding cage is very large - able to hold many pounds of bees. I don't know that there ever was a standard-sized bulk bee container. Bulk bee cages served very specific needs. Occasionally, a package producer would bring back this large container of bees and make up smaller packages at the home shop. Other uses included a commercial beekeeper buying bulk bees to supplement the overwintered population of his colonies. Occasionally, large beekeepers would make up their own packages as they went along from bulk bee cages - without the hassle of all the individual shipping cages in the yard. If you have not worked with bulk bees before, you probably have a great many questions such as - "Don't the bees drift badly?", "How do you get the bees out of the large cage?", "Do they overheat easily in the big cage?" "How do you keep them fed in the big cage? - and on and on. All those questions and many more must be resolved with answers that are not readily available. This means for most of us - even the larger customers - that we just pay more money and handle the smaller individual cages.

Dead Bees When the producer waves "Goodbye" to you, in most cases, the bees are your responsibility. If they are shipped via the USPS, there *may* be insurance, but large orders won't be shipped that way. In general, if you pick them up,

they are your responsibility.

The Vehicle Bigger loads present bigger potential problems. A pickup truck transmission failing is bad enough, but to drop the transmission on a 5-10 ton straight freight truck is not a simple Thursday morning job. Things go wrong in spite of the best plans, but the truck for the trip should be dependable. I have no illusions of that being new advice, but here's the increased risk.....in years past, if the load was lost, there was a good chance that bees could be re-purchased - expensive but doable. Currently, with the heavy demand for packages and the required early ordering date, there is an excellent chance that the bees could not be replaced. Then what?

The truck needs to have a smooth suspension system. We once used a ten ton truck to haul research hives to Alabama (We had regulatory permission to enter the state for research purposes). The truck was essentially empty except for the hives and our research equipment. It was a very rough ride both ways. During a subsequent presentation, I made the comment that, "the truck rode so rough that we had to pull off the road the change the radio station." That statement was very nearly true and I have had numerous drivers tell me they knew exactly to what I was referring. Packages take up a lot of space but don't really weigh a lot. A truck with a heavy suspension can keep the clusters broken and will bounce the sugar syrup out making for a general mess. Even so, a truck is a truck. I would never suggest removing suspension to make the truck ride smoother only to then be "under sprung" the remainder of the year.

Special Handling Postal Rates Presently, the only way to get bees other than making a trip to get them is to have the postal system deliver them to you. For large orders that is not an option. USPS Special Handling is very possibly going to get much more expensive within the next year or so. Presently, bees are in the same shipping category as worms, crickets and poultry. As you should expect, bee shipments have been considered to be hazardous cargo by some in the legal community. If that concept develops into something concrete, it will only become more difficult to ship packages via any method. Either way, bee package customers are going to be required to pay considerably higher shipping rates in the near future.

Occasionally, toward the end of the shipping season, commercial producers have hauled packages to a pre-arranged central receiving point. I even referred earlier in this article to a load coming to Cincinnati. But these trips come at the absolute busiest time of the year for the package producer. These people are literally working night and day. Then they load up and drive night and day. Not an easy job. State beekeeping groups could really come into play here. They could organize the package order, place it, guarantee payment, and then selected members make the trip (How those members are selected for such a trip will make for an interesting process). Renting a truck through a national chain, though a bit pricy, provides for an insurance policy. If the truck fails, get another and get back on the road. Alternatively, drive a private truck, but be aware, if that truck should fail, rental trucks can be used as alternatives. Any truck, driven by anyone, should have excellent ventilation. Upper ventilation ports within the truck box are excellent. It may be that bee clubs could devise a trailer or that individuals could devise such a trailer and haul bees for hire. This is clearly an area for entrepreneurial beekeeping development - The Road Wranglers of Package Bees.

There is no clear outline for what one should do to acquire experience in hauling large orders of package bees. Start with a small truck. Make a few runs. Talk to others. Be creative. Let the size of the package order grow as your experience grows. Everything is a variable. Being youthful helps. Alot.

Package producers realize better than anyone that the ways packages are produced and distributed are in transition. Even without mites, the cost of shipping bees would have gone up and these trends of independent haulers would have developed. Mites have made package bees more precious and therefore, have sped up the process of developing alternative methods of shipping bees.

What will package bee production look like ten years from now? How will bees be hauled ten years from now? Package producers generally say that they are shaking all the packages they can right now. If the market is there, why don't they grow? In two words - *experienced labor.* It is outright difficult to find competent seasonal labor. Second, it really helps to inherit a bee package operation. If you're going into commercial beekeeping, why go into package and queen production when you can make a similar income producing honey or providing pollination services? Queen and package production is intense. The efficient package operation has two of everything - two can sealers, multiple pieces of pneumatic equipment, trucks. There is not enough time to get anything repaired during the height of the shipping season; therefore backups must exist for everything. Thousands of baby nucs must be maintained or built (at around $25 - $30 each). Sources of screen wire and wood must be dependable and prices established. Then there's office equipment and staff, field laborers, advertising, and phones (the phones are necessary for both your orders and your complaints). Most importantly, thousands of colonies of bees must be maintained in 50 - 60 different locations.

So what will it be in the future? Better overwintering, earlier splits, fall queen replacements? Or will the package industry continue to evolve and adapt in order to meet the increasing demand? Will specialized bee handlers develop who will custom haul packages, queens or colony splits? I don't know. But...I thought the U.S. package industry was down for the count when the Canadians closed their borders to packages from below. Some did give it up, but for the most part our package industry is still there - shaking packages and huntin' queens. Stay tuned. BC

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

Acknowledgments:
Wilbanks Apiaries - Personal Communication
Rossman Apiaries - Personal Communication
B. Weaver Apiaries Web Page

Queen Problems – Survey Results . . .

Thomas C. Webster

In recent years, many commercial and sideline beekeepers have complained about problems with queens. Supersedure is said to be more common than in years past, and the introduction of new queens is thought to be more difficult. Washington state apiarist James Bach (1993) listed 13 different types of beekeeping problems, most of which are related in some way to the queen, and discussed possible causes.

Many causes have been suggested. Some beekeepers attribute these problems either directly or indirectly to the tracheal and Varroa mites. Queens may be weakened directly by mites during their development in queen cells or as adults. Alternatively, miticidal treatments may be affecting the queens and the interactions between queens and workers. Or a "mite syndrome" effect may be at work, due to the debilitating effects of viruses. U. S. Department of Agriculture researchers H. Shimanuki, A. Hung and others (1994, 1995) discuss the possibility of interactions between viruses and parasitic mites. Bach (1993) suggested that the problems may be attributed to pollen shortage, frequent movement of the hives, and other factors that have nothing to do with mites at all. Kim Flottum (1997) points to the effects of weather and a reduced feral population of bees, in addition to mites and viruses.

In an attempt to find a relationship between beekeeping practices and queen problems, we administered a survey of commercial beekeepers at the 1997 American Honey Producers Association conference in Memphis, and at the 1997 American Beekeeping Federation conference shortly afterward.

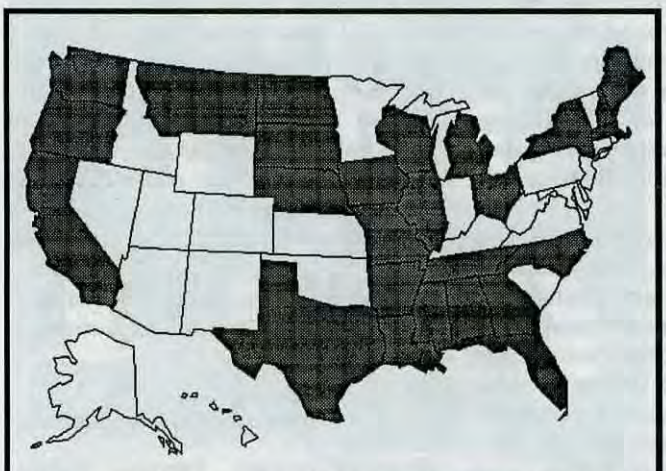

Fig. 1 Beekeepers with hives in 26 states (shaded) plus Ontario responded.

Surveys are useful tools for assessing widespread beekeeping concerns. They allow one to gather a lot of information fairly quickly. In a few minutes, each of these 44 beekeepers summarized their opinions formed by many years of working bees.

However, surveys have their limitations too. In any survey, the answers depend on both memory and objectivity. Do we all accurately remember our beekeeping experience from 15 or more years ago? Queen supersedure can be overlooked if the queens aren't always marked. Are we tempted to color our responses according to our own opinions and desires? And even if everyone answers the questions accurately, we must also consider that beekeepers differ greatly in their individual techniques. For example, 20 beekeepers could easily have 20 different methods for introducing queens. These differences often affect beekeeping problems and observations. A survey usually can't be designed to sort out the significance of many different methods.

With this in mind, we can still use the results of a survey to give us a rough idea of how a particular beekeeping issue stands. If patterns in the responses are evident, we can follow up with a closer study of what is suggested by those patterns.

This survey was short and simple – the essential ingredients for a good response. I asked that only commercial beekeepers who have had experience since *before* the arrival of the mites respond, and we collected 44 responses.

The idea was to look for patterns in queen problems. Have most beekeepers experienced increasing problems with their queens, or have we been hearing only from a vocal minority? Is the movement of bees associated with supersedure or introduction problems? For this question I used "100 miles" as the critical distance for movement. This distance is fairly arbitrary, but gives a starting point for comparisons. Which mite – the tracheal mite or the *Varroa* mite – seems to be the most serious? Is the use of miticide treatments related to queen problems? Do hives kept in northern states have more, or less, of this trouble?

The results show a few trends, but the overall response is not overwhelming in any one direction. Some, but not all beekeepers, feel they are having more problems with queens now compared with the pre-mite era. They felt that both supersedure and introduction of queens had become more troublesome. Recall that this

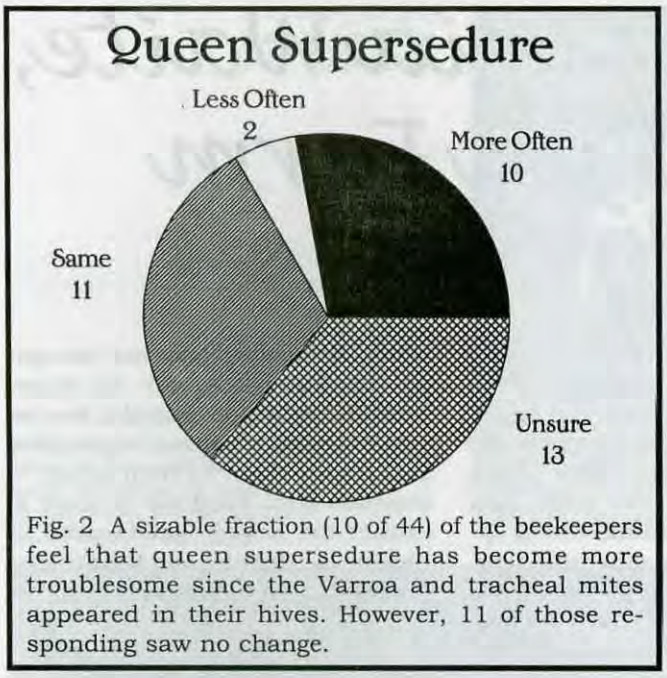

Fig. 2 A sizable fraction (10 of 44) of the beekeepers feel that queen supersedure has become more troublesome since the Varroa and tracheal mites appeared in their hives. However, 11 of those responding saw no change.

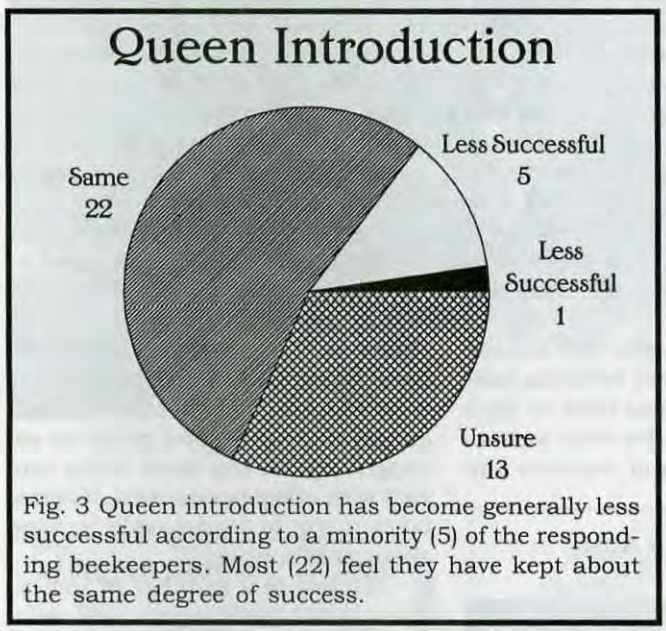

Fig. 3 Queen introduction has become generally less successful according to a minority (5) of the responding beekeepers. Most (22) feel they have kept about the same degree of success.

survey was administered a year ago, previous to last season.

Are these problems related to beekeeping practices? The results indicated :

(1) There is not a strong relationship between movement of bees (100 miles or more yearly) and perceived queen loss. However, this is based on a small number of responses. Only 14 of the beekeepers surveyed said they move bees this far.

(2) Bees kept in northern states show about the same level of queen problems as bees in the south. Beekeepers with bees in 27 states plus Ontario responded.

(3) Beekeepers who struggle with Varroa mites more than tracheal mites have about the same concerns with queens as those who have the most trouble with the tracheal mite.

(4) The use of mite and Nosema treatments are not related to complaints about queens.

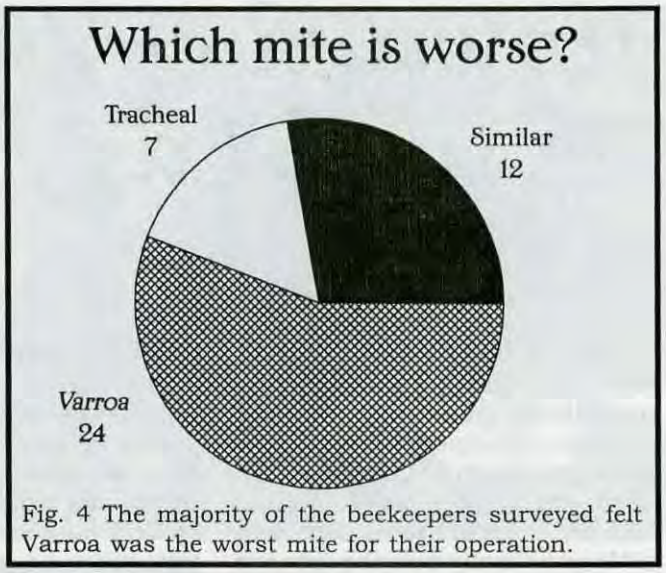

Fig. 4 The majority of the beekeepers surveyed felt Varroa was the worst mite for their operation.

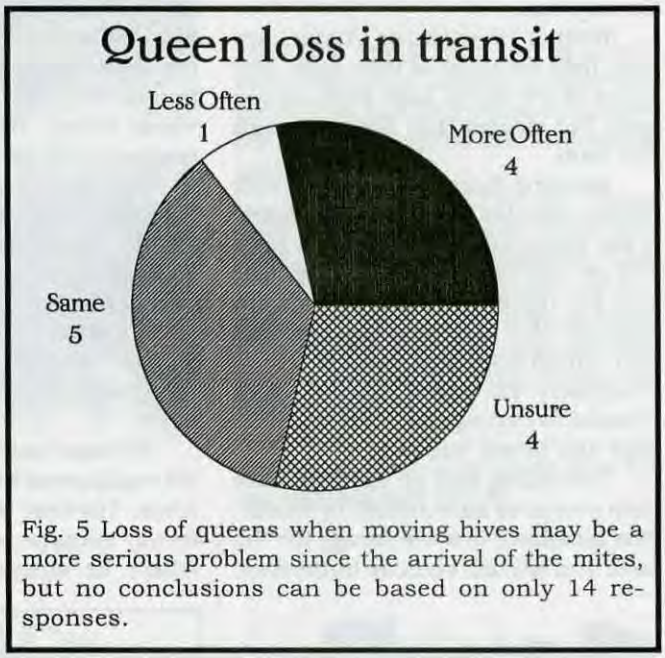

Fig. 5 Loss of queens when moving hives may be a more serious problem since the arrival of the mites, but no conclusions can be based on only 14 responses.

Where do we go from here? The great complexity of the queen bee, and her interaction with worker bees in the hive, means that a research project can focus only on one small part of the problem at a time. There is also a difficulty in studying queens that have been rejected or superseded. It's almost impossible to recover and then study these queens after the hive has rejected them. The best approach is a methodical study that examines one or a few factors at a time. BC

Tom Webster is the Extension Specialist in Apiculture, Kentucky State University, Frankfort, KY.

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Howard & Virginia Waite, and Lazy Run Farm

Claude Wade

Howard Waite has been keeping bees for a quarter of a century and enjoys every minute of it. He took an early retirement from Allison Motor Company in Indianapolis, Indiana, and is now in his 80s. He and his wife, Virginia, live on their farm in Morgan County near the Johnson County line.

Neither Howard nor Virginia are lazy; they are busy as their bees. The name of the farm, Lazy Run, comes from the stream that flows through the farm.

Howard has had his ups and downs with his bees over the years. A few years ago the mites took their toll on his colonies, but this year his persistence paid off with a bumper crop of honey. His son Dale just retired from the Chevrolet Truck Company in Indianapolis, and Howard is hoping that Dale will help with the honey harvest.

The rolling hills on the farm have lush meadows surrounded by woods. The meadows provide forage for the bees and wildlife such as butterflies, turkeys and deer. The woods produce hickory nuts and walnuts if you can beat the squirrels to the crop.

Honey plants that grow in the fields are sweet clover, little Dutch clover, and alfalfa. The woods and borders have an abundance of asters, goldenrod, and other wild flowers. Howard plants some buckwheat near his orchard as he likes to watch the bees working the blossoms and hopes they will store some buckwheat honey. This past Summer he produced two crops of buckwheat.

Two ponds and a small creek provide water for the bees and fish for the beekeeper. In the Winter, Howard drills a hole through the ice and catches nice bluegill with wax moth larva. In the Summer, he uses a fly rod to catch bluegill and a spinning rod to catch bluegill and catfish.

Howard uses a golf cart to haul his equipment to and from his beehives. The cart is also used to haul honey supers to the well house, where he stores and extracts the honey. Sometimes bees are brought into the well house with the honey harvest. He has developed a bee-removal device to capture these bees and return them to their hives. A stainless steel extractor is used to extract the honey that is used in cooking by Virginia, and the surplus is sold or given to friends and neighbors.

His workshop is located in the garage, and he is always working on some project. He built a solar wax melter to melt cappings wax and old comb. He makes birdhouses for the bluebirds and keeps a hummingbird feeder and a regular bird feeder filled for the many visitors. Every now and then an oriole will visit.

Pine trees growing near the house provide plenty of dry needles for smoker material. The Banta Bee Supply Store operated by Boyd and Madonna Musgrave is located just north of the farm, and this is where Howard gets his bee supplies and groceries. It is a good place to get caught up on the local news and visit with other beekeepers. Virginia takes a trip to Martinsville to shop about once a week.

Howard is a member of the Indiana State Beekeepers and subscribes to bee magazines to learn more about beekeeping. He likes to try different methods to improve his skills.

Their dog Rusty is a constant companion. He greets visitors by barking to inform the Waites that someone is coming up the lane to the house.

Virginia is always busy in the kitchen cooking or canning something from the garden. Fresh vegetables are daily fare at their table.

Howard likes to order different kinds of fruit trees for his orchard. The bees help pollinate the fruit. Excess fruit is sometimes turned into homemade wine, which Howard shares with his friends. He has

Howard and Virginia Waite, from Lazy Run Farm, in Indiana. Neither, by the way, are lazy.

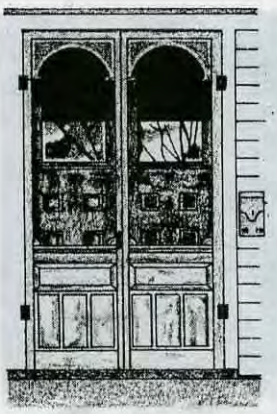
Howard, his golf cart and part of his 1997 bumper crop.

Down by the pond. Rusty (the 4-legged family member) and Howard show off the pond – used for fishing in both Summer and Winter, and a water hole for his bees.

started a small vineyard on a hillside. Kiwi vines enclose a small side porch that is a good place to observe the many bluebirds and hummingbirds.

Every Fourth of July the Waites have a big hog roast and invite relatives, friends, and neighbors. This is a good time to tell his visitors about the great honey crop of 1997. I would say brag, but did you ever hear a beekeeper brag about his honey crop? BC

Claude Wade is the retired State Apiary Inspector from Indiana.



Ann Harman

Home Harmony

Hot Drinks For Cold Weather

No matter where you live, it's January. This month can have crisp, enjoyable Winter days or perfectly awful wet, cold, miserable days. Let's see what we can do to help survive what can be a cold, dreary month.

First, bring in some wood for the fireplace and get the fire started. Find that book you've been planning to read for months and put it on the table next to your fireside chair. Next, take these recipes to the kitchen and get out the necessary pots and pans, measuring cups and supplies. You'll be able to turn this day into something enjoyable.

You can take your pick of the recipes for something warm to drink. If the weather continues to be miserable, you will have enough recipes for something different each day. Many of the recipes make more than one serving, so you can either divide the recipe to make a serving for one or two to be sipped while hibernating, or you can invite some friends to share the fireside warmth and conversation with a warm honey drink.

Many of the recipes call for ground nutmeg. You'll have the best flavor from grating your own whole nutmeg. It is quick and easy. Try it.

HOT MULLED CIDER

Hot cider is a warm-you-to-your-toes sort of drink. It is best with fresh cider, but with the addition of honey and spices, any cider will do.

1 quart apple cider
1/2 cup honey
6 lemon slices
12 whole cloves
1/8 teaspoon ground nutmeg
6 cinnamon sticks

In a saucepan, combine all ingredients except cinnamon sticks. Simmer 8 to 10 minutes. Pour into six mugs, removing lemon slices and cloves if desired. Add a cinnamon stick to each mug for stirring. Yield: 6 servings.

The Healthy Taste Of Honey
Larry J. M. Lonik

HOT SPICED TEA

Of course you can sweeten any cup of tea with honey, but you might wish to have a spiced tea because it is a bit different.

4 cups freshly brewed tea
1/4 cup honey
4 cinnamon sticks, each 3 inches long
4 whole cloves
4 slices citrus fruit

Combine tea, honey, cinnamon and cloves in medium saucepan. Bring to a simmer over medium heat and continue heating without boiling for 5 minutes. Strain into mugs. Garnish with citrus slices. Serve hot. Makes 4 servings.

Sweetened With Honey
National Honey Board

TOPAZ TEA

For those who like the tang of ginger, this tea recipe will be a hit.

6 teaspoons loose tea or 6 tea bags
1 stick cinnamon
1/2 teaspoon ground ginger
8 whole cloves
6 cups boiling water
5 teaspoons honey

Warm teapot with boiling water. Put tea, cinnamon, ginger and cloves in warm pot. Add boiling water. Stir in honey and let steep for 3 minutes. Strain and serve hot. Serves 6-8.

A Honey Of A Cookbook
Alberta Beekeepers Association

SPICY COCONUT CREAMER

This next recipe is for coconut lovers.

1/2 cup flaked or shredded coconut
1 tablespoon butter, melted
1/4 teaspoon cinnamon
1/4 teaspoon nutmeg
4 cups milk
3 tablespoons honey

Combine coconut and butter in saucepan; heat until coconut is golden brown. Add remaining ingredients; mix well. Bring to serving temperature over medium heat, stirring constantly. Strain and serve in mugs; garnish with cinnamon sticks, if desired. Yield 1 quart.

Mississippi Homegrown
Mississippi Beekeepers Association

MOCHA HOT CHOCOLATE

Here is a grand recipe combining chocolate and coffee. You can sip it through the blanket of whipped cream.

2 squares unsweetened chocolate
1 cup water
1/3 to 1/2 cup honey
1/4 teaspoon salt
2 teaspoons instant coffee powder
3 cups milk
1 teaspoon vanilla

Place chocolate, water, honey and salt in medium saucepan. Bring to a boil, stirring until chocolate is melted. Continue boiling, stirring frequently, for 3 minutes. Add coffee powder and milk. Heat until very hot, but do not allow to boil. Stir in vanilla. Top with whipped cream and chocolate sprinkles. Yield: 4-6 servings.

Nature's Golden Treasure Honey Cookbook
Joe M. Parkhill

WASSAIL

These next two recipes make a large quantity of hot drink. You can keep them in the refrigerator and reheat individual portions another time. They are both really delicious and quite different from mulled cider although they both contain cider.

1 gallon apple juice
2 cups pineapple juice
4 sticks cinnamon
1 cup bourbon or brandy
2 cups orange juice
2/3 cup lemon juice
1/4 cup honey
cinnamon sticks

Combine first six ingredients in large pot. Bring to a boil. Reduce heat and simmer for 30 minutes. Add bourbon or brandy and honey; remove cinnamon sticks. Serve with a fresh cinnamon stick with each cup. Makes 5 quarts.

Kansas Honey Producers Cookbook

HOT PINEAPPLE NECTAR

1 quart pineapple juice
1 cup orange juice
2 cinnamon sticks, broken
1 teaspoon whole cloves
4 whole cardamom seeds, crushed
2 cups apple cider
one 12-ounce can apricot nectar
1/4 cup honey

Combine juices in large saucepan. Tie spices in cheesecloth bag. Add the spice bag and the honey to juice mixture and bring to a boil. Reduce heat and simmer 5 minutes. Discard spice bag. Makes 2 quarts.

Kansas Honey Producers Cookbook

HONEY GROG

Although many of these recipes use apple cider as a base, each recipe gives quite different results. Try each one to find your favorite.

4 cups apple cider or apple juice
juice of 1 orange
1/4 cup honey
2 tablespoons butter or margarine
1 cinnamon stick, 3 inches long
1 teaspoon grated orange peel
1/4 teaspoon ground nutmeg
1/2 to 3/4 cup light rum (optional)

Combine all ingredients except rum in medium saucepan and bring to a simmer, stirring occasionally. Simmer 5 minutes. Stir in rum just before serving, if desired.

Sweetened With Honey
National Honey Board

Now all you need is a comfortable cat and a snoozing dog.

Richard Taylor

Bee Talk

"If only a small percentage of the seeds we have been sending out germinate, in a few years there will be Evodias all over the continent."

Evodia seeds – we've got a fresh supply! Thanks to the generosity of four readers: Mr. James McCaskill in St. Louis, Mr. Armand Provost in Connecticut, Mr. John Laferriere in Rhode Island and Mr. Max Griffie in Pennsylvania, who sent us a large bag. So we can again distribute them to beekeepers wanting to grow these beautiful and much sought after trees. Last year we sent out hundreds of packets. I stopped counting after 500, so there must have been nearly 700, and requests kept coming in long after the distribution had ceased. Anyone wanting a packet of seeds is requested to follow exactly the instructions at the end of this article. The packets require special packing to avoid being crushed, then must be hand-stamped at the post office, and we have learned exactly how to do this.

Results of our seed distribution last year were mixed. Many readers got no germination at all, while others had excellent luck. One even had the seeds all germinate before they were planted, having kept them in a moist place. They do normally require a period of cold, at least several weeks. Those who had the best results planted them out-of-doors in the Fall or Winter. When this is not feasible, the seeds should be kept in a freezer until they can be planted. Germination is usually very slow; seedlings sometimes do not appear until mid-May or even June. I think a number of readers who had no luck with them simply were not patient enough.

My one and only tree did not bloom last Summer, so there were no seeds, but the previous Summer it did, and seedlings then appeared by the hundreds under the tree in the Spring. Many are still there, getting bigger and bigger. I used no special tricks to get them to germinate. They simply fell from the tree, after I had harvested a couple gallons of seeds.

There is a lot about this plant that mystifies me. For one thing, there seem to be several species of Evodias, all of Asian origin, and all similar to each other. I don't know whether mine is a Chinese Evodia or a Korean Evodia. I also do not know how the blooms get fertilized. Is the tree self-fertile, or not? I just have this one tree, and I can't believe there are any others for miles and miles, so I have assumed it is self-fertile. But readers who have groves of these trees distinguish between the male and female ones. Mr. Provost, for example, has several mature trees, seven or eight years old, but got seeds from only one. The others bloomed, and were worked heavily by the bees, but produced no seeds, suggesting to me that they are male. This seems to be confirmed by Mr. Griffie, who has nine trees about 25 years old, plus about 20 that are only three years old. He writes that the male trees had very little bloom this Summer, but the seed tree, from which he gathered the big bag of seeds he sent me, was loaded. This certainly implies that the trees are sexually differentiated. Mr. Griffie also notes, interestingly, that two of his 20 young trees bloomed this past Summer, at three years of age. Mine did not bloom for at least seven years.

If only a small percentage of the seeds we have been sending out, last year and this year, germinate, then in a few years there will be Evodias all over the continent, and I have wondered about the wisdom of propagating a non-native species to such an extent. Could it become an out-of-control pest? And what is the quality of the honey? It must certainly be an excellent nectar source, in the light of its long period of bloom late in the Summer and the greedy way the bees work those blooms. Not too long ago I was at a bee meeting in Michigan, where we were all invited to taste several honey samples. One of them I thought was not very good, and the others agreed. We were then told that it was *thought* to be Evodia honey. Well, I learned long ago not to trust speculative inferences about honey sources. Some honeys, like basswood and buckwheat, you can tell right off where they came from, just by flavor, but with most honeys, you can't be sure at all, even when the flavor is a familiar one. It is still not known for sure whether what we call goldenrod honey here in New York comes from the goldenrods or the asters. And for years, beekeepers in Connecticut thought they were getting basswood honey, until Allen Latham persuaded them that it was from the sumacs. Mr. Griffie's observations on this are reassuring, however. He has 14 beeyards, and a couple of Summers ago, when he was getting no nectar flows at any of the other yards, he got a lot of very fine honey at his

Continued on Page 54

?Do You Know? Answers

1. **False** Melted beeswax is lighter than water with a specific gravity = 0.95. While floating on the water, it can be ladled off or allowed to solidify and removed as a cake.
2. **True** Honey is a super-saturated solution (containing more dissolved material than can normally remain in solution) composed primarily of two sugars, glucose and fructose, dissolved in about 17 percent water. As honey is extracted and stored, excess glucose temporarily suspended in the honey, precipitates out in the form of glucose crystals. At any time after complete granulation has occurred, only about 15% of the honey is solid. Glucose crystals form a lattice-work within the honey which immobilizes other honey components into a suspension.
3. **True** Water is a vital component in the honey bee diet; bees without water will die within a few days. Water serves some very important functions internally including carrying dissolved food materials to all parts of the body, assisting in the removal of waste products, and digesting and metabolizing food. Water is also important in the production and secretion of larval food by nurse bees. Honey bees also require water for the utilization of honey and crystallized sugar.
4. **False** The hatching of the egg into the first larval stage is almost indiscernible, and the larva slowly becomes exposed as the embryo moves and the egg membrane dissolves. Other insects hatch from their eggs by rupturing the membrane; gradual dissolution of the membrane during eclosion appears to be unique to honey bees.
5. **False** Honeydew is a sweet liquid excreted by some types of insects, principally plant lice (aphids) and scale insects, feeding on plants. It is frequently gathered and stored by honey bees and in the United States is considered inferior to honey in flavor and quality.
6. **True** The latency period for worker egg laying after a colony loses its queen varies between different races, with European races averaging 23-30 days and African races only 5-10 days before workers begin laying eggs.
7. **True** Dandelions produce large quantities of pollen and nectar. Both materials are extremely important in many geographical areas for early colony buildup in the spring. Honey gathered from dandelions is dark and strong, most of it is consumed for brood rearing. Occasionally a small surplus will be secured from this source, but it blooms so early that surplus is unusual.
8. **True** Citrus is one of the very important bee forages in the most southern parts of the United States. Although several species are involved, most citrus honey is marketed as orange honey. Few plants yield nectar more copiously than citrus, even though most species do not require insect pollination. Most oranges, grapefruit, lemons and limes do not benefit from cross-pollination. However, a number of specialty citrus, (e.g., tangelos and some tangerines) produce reduced yields or no yields at all, in the absence of honey bees for cross-pollination.
9. **True** Colonies should never be allowed to get below 10 to 15 pounds of food at any time, otherwise optimum conditions for brood rearing are not present. If reserves fall below this amount, colonies should be fed or they will likely face starvation.
10. **True** The chief factors controlling brood rearing in the honey bee colony are the availability of pollen and honey, temperature, number of bees available to care for the brood and possibly day length. Fresh nectar and pollen early in the spring serves as a strong stimulus for brood rearing. Some beekeepers do stimulatory feeding in the spring to increase this natural response.
11. D) Refractometer
12. E) E. J. Dyce
13. B) 2-Heptanone
    E) Isopentyl Acetate
14. Water White
    Extra White
    White
    Extra Light Amber
    Light Amber
    Amber
    Dark Amber
15. Carbon Dioxide
16. Fumidil-B or Fumigillin
17. Both honey and beeswax should never be heated with a direct source of heat. Honey is extremely heat sensitive and is normally heated in a water jacketed tank or with dry heat when it remains in a container. The fine flavor and delicate bouquet of honey are particularly vulnerable to heat. In addition to the loss of more volatile aromas, excessive heat can change some flavors and induce off-flavors from its effect on the sugars, acids and protein materials. Beeswax, in addition to being highly flammable, can be easily damaged by overheating. The use of a hot water bath gives an added margin of safety from the standpoint of fire and does not cause appreciable darkening of the wax which can occur with direct heat or higher temperatures.

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.

Questions?

Safe From Bears

How do you protect an apiary from bears?

Marion Rea
Virginia Beach, VA

Bears have been rapidly on the increase recently, especially here in the Northeast. A commercial beekeeper only 50 miles from me has 40 yards, and all but two have battery-charged electric fences as bear protection. An electric fence is simple and inexpensive to put up and maintain, and I have directions for anyone needing them.

Stuck Strips

I inserted Apistan strips in my hives exactly according to label directions and when I tried to remove them six weeks later they were so locked into honey and beeswax that I could not get them out. Should I have done things differently? And will the embedded strips be a problem come Spring?

Robert S. Hough
Beaver Falls, PA

These strips must be inserted down below, where the bees are clustered, in the brood nest, and not where (surplus) honey is stored. They are of no value unless they are placed where the bees will have maximum and constant contact with them. There will be no great difficulty removing them in the Spring, but you may have to remove some frames to do it. The directions that come with the strips can be very misleading, since colonies differ with respect to strength and location of brood nest.

Excluder Goes Where?

How does one use a queen excluder? I have my bees in two-story hives. Should the excluder be inserted between these two full-depth hive bodies and supers added to the second story, or should it go on top of the second story and right under the supers?

John Scott Jr.
Princeton, WV

Whether to use excluders or not depends on location. Few beekeepers up here use them, but in some areas they are a near necessity. It all depends on the strength of the honey flows. When nectar comes in fast, then the queen is forced into the lower parts of the hive by the nectar being stored above. If you do use an excluder it should, except in the case of very special management procedures which I shall not get into here, be put right under the supers that will be harvested, not down where the bees are raising brood. You will probably find that, with the excluder over the second story, and right under the extracting supers, the bees will put plenty of honey in the second story for their Winter needs, and you will not find yourself harvesting supers with brood in them. The excluder not only keeps the queen down below, it also determines where the brood nest is going to be.

More Honey?

I have three hives near soybean fields and another four 10 miles away, near fruit trees. The three near soybeans made about six supers of honey apiece, but those near the fruit trees made very little honey and swarmed early. What can I do to get more honey from the fruit bloom?

Vicki Hale
Carlisle, AR

Fruit bloom seldom provides a major nectar flow because it comes so early, before the bees have reached full strength, and there is likely to be rain. Often the bees use this nectar to build up on early in the season and then swarm, as yours did. What you must do is try to limit swarming, at the same time keeping your colonies as strong as possible. You might try early requeening in the Spring, as bees are less likely to swarm with young queens. Then exchange a few brood combs for empty combs, to provide room for the queen to lay, but keeping the brood combs in the same colony if possible. This is easily done if your colonies are in two full-depth stories: You simply keep the brood distributed through both stories.

Ventilator - Yes, No?

What do you think of the beehive ventilator for which I have been seeing full-page ads?

Daniel Hertzler
Scottdale, PA

Honey bees have a highly developed and complex system of ventilating their colonies, by means of which they evaporate nectar, regulate carbon dioxide in the colony, and regulate temperature. If you visit a colony on a warm night during a period of nectar flow, you can hear a gentle, subdued roar of thousands of wings. If you then hold a strip of paper tissue near the entrance, you will find that air is coming out on one end and going in at the other, indicating the flow of air through the hive. There are many ways to increase hive ventilation for colonies that might benefit from it, the commonest being to stagger hive bodies and supers slightly, creating extra cracks. This is sometimes worth doing with colonies in the open sun. In view of all this, the idea of a hive ventilator seems to me overdone. Time, however, may prove it to be worthwhile.

Essential Oils?

I have been reading about using essential oils for combating mites. Are these effective?

Elizabeth Latocha
Levering, MI

Essential oils are being evaluated by Dr. Calderone, at Cornell, and by other bee scientists, but no firm conclusions based on scientific experimentation are available yet. My own view is that mite problems are getting solved through these and other approaches. Definite progress has been made, at Michigan State University, University of MN and other locations toward developing resistant strains of bees. It seems that special, safe formulations of formic acid may also soon be available for control. This is especially promising because formic acid is a natural presence in bee colonies.

Questions are eagerly solicited. Send them to Dr. Richard Taylor, Box 352, Interlaken, New York 14847 (not Medina) and enclose a stamped envelope for direct response.

Richard Taylor

Answers!

Gleanings

JANUARY, 1998 • ALL THE NEWS THAT FITS

Gel Patent Applied For
FORMIC KILLS BOTH MITES IN U.S.

Domestic honey bees can be protected from both tracheal and *Varroa* mites – two major pests of this crucial insect – with an application of formic acid mixed with a food-grade gelling agent.

Scientists with USDA's Agricultural Research Service say the gel formulation could smooth the path to U.S. registration of formic acid to combat both mites. That's because the gel would reduce a beekeeper's contact with the acid.

The ARS researchers filed a patent on the technology in December. They say beekeepers could alternate the formic acid gel treatment with the industry's standard *Varroa* mite-fighter, fluvalinate. This would help slow the *Varroa* mite's progress toward fluvalinate resistance in this country.

U.S. beekeepers get nervous when they read about Varroa mites in Italy and France developing resistance to fluvalinate, because it is currently the only U.S.-registered pesticide against *Varroa* mites. Menthol is the approved product for treatment of tracheal mites.

Formic acid has proven effective outside the U.S. against both *Varroa* and tracheal mites. But liquid formic acid evaporates quickly and must be re-applied four to five times per season.

The ARS scientists say sealing the formic acid and gel in a plastic bag would give beekeepers a product requiring less handling. The bag could be sliced open inside the hive, allowing the formic acid to evaporate and leave behind only a harmless residue. In field tests, the experimental product killed up to 84 percent of the *Varroa* mites and 100 percent of the tracheal mites, an extra benefit.

Diets: What They Say, What They Do
SUGAR NOT A CONCERN

Whatever else they eat, many consumers are reluctant to swallow their pride and admit that advertising guides their choices in the supermarket. Is that really such a shameful confession? The data comes from a massive survey conducted for *Parade* by Mark Clements Research. While one expects some people to say they're impervious to sales pitches, the study finds 23 percent of parents denying that their children "ever influence" the foods they buy. Do such people have great strength of character, or are they just weird? In general, people are less solicitous of their kids than you might suppose when it comes to food. Though respondents put price a distant second to taste when asked to rank the factors governing their own choices as grocery shoppers, price was the top factor when parents were asked to say what influences their food buys for their children. Hmm. Meanwhile, you can see that people have digested the conventional wisdom about the perils of fat and cholesterol, relegating the once-proud calorie to the status of also-ran.

The following items are ranked in order of concern to respondents:
Fat - 56%; Cholesterol - 22%
Calories - 15%; Sugar - 8%

EUROPEAN BEEKEEPERS FORM PROFESSIONAL ASSN.

On October 25, 1997 in Donaueschinge, Bavaria the Presidents of the Professional Beekeeper Assns. of Austria, Italy and Germany founded the European Professional Beekeeper Association (EPBA).

The temporary administration is as follows: President - Mr. Harald Singer (President of the Austrian Professional Beekeeper Association, ÖEIV); 1st Vice President - Mr. Luca Bonizzoni (President of the Italian Professional Beekeeper Association, A.A.P.I.); 2nd Vice President - Mr. Günter Stecher (President of the German Professional Beekeeper Association, DBIB); Secretary - Mr. Karl-Rainer Koch.

The provisional headquarters of the EPBA is at Oppenau, Germany. First general meeting was scheduled for Jan. 1, 1998 in Strassbourg, France.

The appointment of the representatives of the Professional Beekeeper Associations of Spain and France will be shortly.

The EPBA asks for memberships of the other European countries.

The policies of the EPBA: Combine the interests of all European beekeepers; Protect the interests of both professional and semiprofessional beekeepers; Define a European standard of the quality of honey; Labelling honey as non-European honey or European honey; Grade honey as "Industry Honey," "Bee Honey," and "Honey of High Quality"; Influence the European Union for a favorable distribution of the money given by the EU to agricultural interests.

For information contact Klaus Nowottnick, Hauptstr. 1, D-98593 Kleinschmalkalden, Germany, Ph. & Fax: 011 49 36849-20003; email nowottnick@aol.com.

Where Do You Fit In?
BETTER QC NEEDED!

Who says there are no growth areas for customer service programs?

According to statistics from the Chicago-based International Customer Service Association, here are 10 industries or organizations that could take a closer look at customer service techniques:

- 5,517,200 cases of soft drinks produced in the next 12 months will be flat.
- 2,488,200 books will be shipped with the wrong cover in the next 12 months.
- 2,000,000 documents will be lost by the IRS this year.
- 268,500 defective tires will be shipped this year.
- 114,500 mismatched pairs of shoes will be shipped this year.
- 22,000 checks will be deducted from the wrong bank accounts in the next 60 minutes.
- 3,506 copies of tomorrow's *Wall Street Journal* will be missing one of its three sections.
- 1,314 phone calls are misplaced by telecommunications services every minute.
- 12 babies are given to the wrong parents each day.

– *Incentives*

EAS Awards

NOMINATIONS WANTED

The James I. Hambleton memorial award was established by the Eastern Apicultural Society of North America to recognize research excellence in apiculture. The EAS Student Apiculture award was established to recognize students studying apiculture at the undergraduate or graduate level in a recognized college or university in the United States or Canada. The awards for 1998 will be presented at the annual meeting of the society at the Seven Springs Mountain Resort, Champion, PA, July 13-17, 1998.

Nominations are now being accepted for both awards. This is an excellent opportunity for the beekeeping industry to recognize the research excellence of its members. Undoubtedly, many deserving researchers are bypassed for this recognition for lack of a sponsor.

Each award nomination must include a biographical sketch of the nominee, a list of his/her publications, specific identification of the research work on which the nomination is based and an evaluation and appraisal of the accomplishment of the nominee, especially of work in the last five-year period for Hambleton award nominees (or a shorter period for Student nominees). Two letters of recomendation supporting the nomination are also required.

Nomination and letters of recommendation should be sent to Clarence Collison, Box 9775, Mississippi State, MS 39762 and received no later than February 1, 1998.

A.I. Root Branch Mgr.

OBITUARY - WM. SONDERMAN

William J. Sondermann, 85 of Mutual, Maryland, died July, 1997 after a six-year struggle with paralysis after a fall from a scaffold. Bill was born in Lincoln Park, NJ and began keeping bees at the age of 14. For many years he was the eastern representative of the A.I. Root Company. He and a partner, Gordon Pratt, of Munsville, NY, ran over 500 colonies for comb honey production. They wintered their bees in the south and moved them around north Jersey for pollination.

I first met Bill in 1986 when I became a MD State Apiary Inspector. He gave me lots of useful tips on handling bees. One of them which I still faithfully practice is the cleaning and transferring of all the brood combs into new or clean hive bodies each Spring. Growing up in north Jersey my dad always kept a few squares of comb honey purchased from Plenges Farm Market, Montclair, NJ. This was one of Bill's outlets, so I'm sure, as a boy, I ate some of his honey. He was a very industrious man and when in his mid-70s he moved here to Southern MD restored an old house and barns and had a nice peach orchard going before his accident. He is survived by his wife Evelyn, a daughter Mrs. Mary Watson of Maryland and son, Robert Sondermann of New York State.

Submitted by Bob Cory, Dunkirk, MD

Honey Board Wins

WEB PAGE AWARD

The National Honey Board Web Site (www.nhb.org) recently received the "Fertile Ground" award from AgriSurf (www.agrisurf.com), a comprehensive index of over 7,000 agricultural Web sites. Only three percent of the sites indexed have received this award.

The purpose of the AgriSurf Web Index is to get people to the information they need in the shortest possible time period, according to the AgriSurf Web site. Sites are hand-picked by AgriSurf's agricultural experts and awards are given based on innovation, content and ease of use.

"The criteria AgriSurf judges sites on is very similar to the Web philosophy of the National Honey Board. Our standard is that ease of use is secondary only to the dissemination of useful information. Web sites should be simple, informative and easy to navigate," said Susan Millsapps, the National Honey Board's Information Manager.

The National Honey Board is honored to be one of the select few to receive this recognition and will display the award badge on the National Honey Board Web site.

PROVINCIAL GOV'T. SUPPORTS POLLINATION

The N.B. Dept. of Agr. and Rural Development and the Farm Credit Corporation offered a unique pilot project in July 1997 to help develop the pollination industry. Under this partnership the FCC agreed to loan money to qualified beekeepers for apiary expansion with a five-year deferral of principle. As well, the NBDARD agreed to buy down the interest payments for acceptable projects over a five-year period. This initiative is expected to be reoffered in April 1998. There is some interest in expanding the initiative to include leafcutter bees.

BIGGEST AGRIBUSINESS DEALS IN 1997

DuPont's 20% stake in Pioneer Hi-Bred	$1.7 billion
DuPont's purchase of PTI from Ralston Purina	$1.5 billion
Dow's 40% stake in DowElanco	$1.2 billion
Monsanto's purchase of Holden's	$1.02 billion
Novartis' purchase of Merck's Crop Protection Div	**$910 million**
BASF purchase of Sandoz products	$695 million
Monsanto's stake in DeKalb	$520 million
PCS's purchase of Arcadian	$475 million
Monsanto's purchase of Calgene	$379 million
Monsanto's purchase of Asgrow	$240 million

Reprinted from Farm Digest

EpiEZPEN PROBLEMS

The manufacturer of EpiEZPen auto-injector has voluntarily initiated a program to exchange EpiEZPen or EpiEZPen Jr. For a free substitute product called EpiPen and EpiPen Jr. You may already be familiar with the EpiPen product line which has been on the market more than 17 years. EpiPen & EpiPen Jr. Are also epinephrine filled auto-injectors that dispense the same drug in the EpiPen & EpiPen Jr. Both auto-injectors are manufactured by Meridian Medical Tech. & distributed by Dey Lab.

The FDA is aware of and agrees with this action. The reason for the exchange program is that an extremely small number of EpiEZPen auto-injectors have spontaneously or prematurely activated on their own. To date, less than 0.01% of EpiEZPens have been identified with spontaneous activation. However, to protect consumer health the manufacturer has initiated this action. Units that have spontaneously activated will have an exposed needle at the black tip, which is easy to detect. Periodic examination of the EpiEZPen and EpiEZPen Jr. Should be conducted until there is an opportunity to exchange the unit.

Once the cause of spontaneous activation in EpiEZPen has been identified and corrected, the improved product will be reintroduced to the market.

If you have questions or concerns feel free to contact Dey Laboratories at 800-527-4278 or 800-755-5560.

MELALEUCA DOOMED?

An Australian weevil called *Oxyops vitiosa,* imported and test-released earlier this year to stop melaleuca trees from overrunning FL's Everglades, might someday be joined by other helpful Aussie insects, including a sawfly.

The melaleuca tree is a native of Australia, where it is not a pest.

Currently, intensive screening of potential new insect recruits to combat melaleuca in the U.S. is underway in FL and at a Brisbane, Aus., laboratory run by USDA's Agricultural Research Service and the Aus. government. These experiments will determine whether candidate insects will eat only melaleuca.

The melaleuca weevil was released in the U.S. the first time on April 26 in the Everglades near Ft. Lauderdale. Researchers agree the insect likely to follow it may be a beneficial sawfly named *Lophyrotoma zonalis* (pronounced Loff-ruh-TOE-muh zoh-NOW-liss).

Greenhouse tests by ARS entomologist Gary R. Buckingham at Gainesville, Fla., show that a troop of 100 sawfly caterpillars can destroy every leaf on a 10-foot-high melaleuca sapling in only 3 or 4 days.

For details, see the story in the Dec. issue of the ARS monthly journal, Agricultural Research, available on the World Wide Web at:

Ohio, Like Other States, In Trouble

FARM LAND VANISHING

More and more legislation is being introduced in Ohio as the result of increasing challenges between farmers and non-farmers.

Urbanites who move out to the country are often seeking more space, a new home, a view and a "simpler" life. Meanwhile, affected farmers either want to continue farming without competing with homeowners for farmland, or, at the other extreme, hope the urban sprawl skyrockets their land values so they can sell.

In many ways, farmland preservation has become an issue because the people and communities have decided to make it an issue, said Larry Libby, an agricultural economist who specializes in rural and urban policy at Ohio State University.

People are concerned for a variety of reasons. They might fear food will become scarce if urban sprawl continues. They see homes being built on farmland at an increasing rate and they want open spaces. Or, they see urban areas being abandoned in favor of newer communities.

They may recognize that land use influences water quality and affects wildlife habitats. They may also recognize that changes in land use affect their taxes and the quality of services they receive. Whatever the reason, Libby said, it has propelled land use into the legislative limelight.

Recently, the Rural Responsibility Act was introduced by state Senator Karen Gillmor, R-Old Fort. The bill mainly looks at the environmental concerns of large-scale production farming. A provision in the bill requires people buying property within a one-mile radius of a farm to sign a disclosure that states they understand that normal farming practices might create noises and odors.

This is just one of the bills to arise since the Ohio Farmland Preservation Task Force released its recommendations earlier this year. A group of Ohio legislators is in the process of converting the recommendations into a single omnibus legislative bill, which includes authority for communities to purchase or lease development rights from farmers. The bill, which is tentatively slated to be introduced in early December, will also establish "agricultural security areas" where farming is clearly the top priority.

Security zones and purchase of development rights (PDR) programs reduce the uncertainty of the area's development, Libby explained. If farmers don't reinvest in the farm because they think the area will be developed soon, they become less competitive. Knowing that the farm will be able to operate without interference from development encourages farmers to maintain or even expand their businesses.

The most important implication of all these bills, whether they are passed or not, is simply that they have been proposed, Libby said. The task force, the legislation and other bills that address land use issues have given visibility to the issue of Ohio's shifting population and its effect on Ohio's agriculture.

For every one percent increase in population, urban land use increased 4.7 percent from 1960 to 1990, said Allen Prindle, an associate professor of economics at Otterbein College in Westerville, who compiled trends data for the task force. Prindle is taking a sabbatical this quarter and working at Ohio State University.

During 1982 to 1992, land used for farming decreased 120,000 acres a year, or 7.5 percent in Ohio. And, the highest population growth is in counties surrounding metro areas, while population is on a decline or slow growth in the center cities. People also are moving out of the rural southeastern Ohio counties.

Urban sprawl is expensive. Although taxes in new suburbs are often higher, they are not high enough to pay for the new services, Libby said. People from non-farm areas tend to see open fields as unused space, when actually the fields are a key part of a food industry that is a major economic asset to the area.

"Some areas are going to continue to grow no matter what," Prindle said. "People involved in land use policies are trying to establish a balance between economic growth, both urban and rural, and protection of the natural and human resources used to support it."

Nutraceutical Property

TEA-TREE HONEY A MEDICINE

A New South Wales company is preparing to begin production of honey from the lepto spermum laevigatum tree – commonly called jelly bush or western tea tree.

New Zealand researches have documented the anti-bacterial properties of tea tree honey and the Australian interest has arisen because the tea trees are growing vigorously in a number of coastal areas of New South Wales after being planted to rejuvenate areas hit by sand mining.

Researchers at the Univ. of Sydney, Univ. of Queensland and Queensland Dept. of Primary Indus. are working on a joint project to document the honey's qualities.

Capilano Honey Company has asked its honey suppliers to collect more of the honey to allow increased research.

In New Zealand, researchers have found the tea tree honey has exceptional anti-bacterial qualities and has potential for treating skin infections, eczema, burns and stomach ulcers.

Capilano said it has plans to commercialize the product and call it Medi-honey.

If this comes about it could lead to beekeepers being paid a premium for the product. That would be quite a turn around as they now get much lower prices for tea tree honey because of its jelly-like consistency and the difficulty in purifying it.

The tree flowers in early Spring and beekeepers in coastal New South Wales usually put their bees on it to build them up for the Summer honey flow.

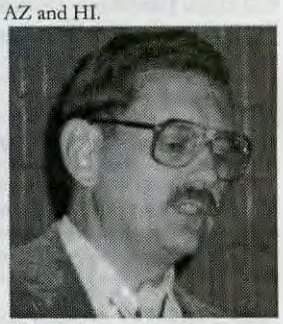
That could all change if the research is successful.

Top Senior Scientist Is Beekeeper

USDA NAMES OUTSTANDING RESEARCHERS

ARS has named Richard J. Brenner, Robert E. Davis and **Eric H. Erickson Jr.** As "Outstanding Senior Research Scientists of 1997." Brenner head's the agency's imported Fire Ant and Household Insects Research Unit in Gainesville, FL. Davis works at the ARS Molecular Plant Pathology Laboratory in Beltsville, MD and Erickson is at the Carl Hayden Bee Research Laboratory in Tucson, AZ.

Erickson is being honored for innovative research and leadership to solve problems affecting beekeepers, crop pollination and the impact of Africanized Honey Bees on the public. He developed practical ways to rescue victims of Africanized honey bee attacks using conventional emergency equipment and fire-fighting chemicals. Nearly all fire departments nationwide now use these methods in bee emergencies. The award cites Erickson as the agency's top senior scientist in the Pacific West Area, which includes WA, OR, ID, CA, NE, AZ and HI.



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PERIODICALS

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THE SCOTTISH BEEKEEPER. Rates from D.B.N. Blair, 44 Dalhousie Rd., Kilbarchan, Renfrewshire, PA 10 2AT, Scotland, U.K. Sample $1.

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

IBRA: INFORMATION AT YOUR FINGERTIPS. IBRA is *the* information service for beekeepers, extension workers and scientists. IBRA, 18 North Road, Cardiff CF1 3DY, UK. ph (+44) 1222 372409. Fax (+44) 1222 665522.

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THE NEW ZEALAND BEEKEEPER. 11 times a year Feb - Dec. by the National Beekeeper's Assn of NZ. Write for rates & indicate airmail or surface. NZ Beekeeper, Farming House, 211-213 Market St So, P.O. Box 307, Hastings, NZ.

SOUTH AFRICAN BEE JOURNAL. Bimonthly in English & Africans, primarily devoted to the African and Cape Bee races. Subscriptions including postage (six copies). 1995 all subscribers outside of South Africa R100-00 surface mail, payment to be made in S.A. Rands. NB. Sample copies available on receipt of a donation. P.O. Box 41 Modderfontein, 1645, South Africa.

BEE TALK ... Cont. From Pg. 46

home yard, where the bees had been working his grove of Evodias. He had no doubt that this was Evodia honey, and he reports that it was of excellent flavor, light and mild, similar to Black Locust honey, which in my opinion is about the nicest honey there is.

As for the possibility that this plant might get out of control and become a pest for some reason or other, I don't think that will be a problem. These trees, though not common as nursery stock, are sold without restriction by some nurseries, as ornamentals. So while they are not common, they are already established here, and have been for years. They have also been distributed for decades by the Morris Arboretum, in Philadelphia, in return for donations, and I assume that the people in charge there know what they are doing.

So if you would like seeds, send your requests, and we will get them to you as time permits, along with some descriptive literature and instructions. The trees require lots of sun, but not much else in the way of special care. The seeds may sprout, and they may not, judging by experience. It is likely that they need special soil chemistry, so you may want to try planting them in different spots. Two horticultural experts have suggested that they may require the presence of what are called "gibberellins" in the soil, but this is apparently not something that you can just go buy from a nursery supply. Anyway, Mr. David Theodoropoulos, one of the horticulturists, is going to test this for us, and we should know in another year.

To get seeds, please follow these instructions *precisely*: Send three *loose* stamps, together with your name and address clearly *printed* on a slip of paper which will serve as an address label. Canadians can send a dollar bill instead of stamps. Do not enclose anything else – no note, no money, nothing. Address your envelope to Seeds, Box 352, Interlaken, NY 14847.BC

Richard Taylor is a philosopher and lifelong beekeeper who lives in the Finger Lakes region of New York.

Advertisers

One Man Band

Richard Dalby

Autumn again and I am back in my little honey house, extracting the last of my honey crop. The weather pundits say a storm is heading our way, so I go about my tasks with a certain sense of urgency. No doubt my bees were feeling this same urgency as they rolled in from the fields on these last warm Autumn afternoons. They were carrying large loads of orange rabbitbrush pollen, the stuff of next Spring's bees. A few bees were winging in with a final load of sticky propolis to seal up that last crack in their hive.

I have three supers to extract this evening. It's nice, thick honey, the distillation of long Summer days. There's nothing fancy about my extracting setup. It's pretty much simplicity itself. Just an electrically heated uncapping knife, two tubs nesting together to hold the cappings and the honey that drains from them, my ancient two-frame extractor, and a settling tank to hold the extracted honey. It's a nice, simple system that works well for someone working alone.

One thing I enjoy as a small-scale beekeeper is being involved in all aspects of honey production, from assembling hives and frames to installing the bees to adding supers to pulling honey and extracting it. There is a poetry to all of this that seems a rare and precious commodity these days. Those who have experienced this poetry of the natural world – which is to say, almost any beekeeper – know what I mean. Beekeeping, I muse, as I uncap a frame of honey, offers a window into the elegant workings of the natural world. As beekeepers, we not only get to observe that world but we also get to participate in it.

Outside my honey house, the evening air has taken on a definite chill. Crickets that sang lustily on late Summer nights have slowed to a last lament. Soon the crickets themselves will be gone as nights become even colder. As I spin out the last of my honey crop, my bees are contracting into a cluster to keep themselves and the season's last brood warm.

I take a break from uncapping so I can dump a bucket of just extracted honey into my settling tank. Since I sell my honey unheated, I must remember to tap out the evening's run in the next day or two, or it will granulate in the tank. The honey dumped, it's back to that old familiar routine of extracting – uncapping, loading frames into the extractor, spinning them, unloading them, and back to uncapping.

In a way, beekeeping is my secret life. Those who don't keep bees can never really understand the shape and beauty of the hours I spend in the apiary. Only another beekeeper can truly know what a beekeeper knows. And that's another part of the poetry: Beekeeping is not something that is amenable to the modern attention span. It's too technical, too subtle, too esoteric to be grasped in the requisite 15 seconds; which helps explain why writers, who don't keep bees never quite get it right.

Someone once wrote that beekeeping, by its very nature, has proven quite resistant to change. And this, too, is part of its poetry. Beekeeping still harks back to our rural past in a way that other areas of agriculture no longer do. Most of agriculture has embraced the belief that bigger is always better. Factory farming may appeal to some, and beekeeping is not wholly immune to the concept, but to a large degree, beekeeping has resisted the corporate approach. As beekeepers, we work *with* nature rather than trying to subdue her to our own ends. And in the process, our bees are instrumental in creating more food, more feed and more fiber than would otherwise exist.

I have things arranged in my honey house so tasks can be done handily and efficiently. While one batch of frames is spinning out its honey in the extractor, I am uncapping another batch to take their place. Then it's unload the empties, load the fulls, and set them spinning, before returning to my uncapping duties. Like a one-man band, the whole show is mine alone and tasks are done simultaneously.

It's been a good season, with a good honey crop and a good demand for the honey. And I have felt, as always, the satisfaction of doing something well and doing it, more or less, on my own terms. Just me and the bees, working together to produce a wonderful product.

After the many bee activities of Spring, Summer and early Autumn, I am ready to turn to other tasks, to change hats, to live for a time a different life. And beekeeping, much to its recommendation, allows me to do this. During the Winter months beekeeping exists on the periphery rather than at the center of my life. But it's not as though beekeeping will disappear from the horizon of my interests. I just acquired two new bee books to be read over the Winter months, and there are records to update and wax to be rendered.

It's a long time from here to the first stirrings of Spring. I'm glad to have gotten this last batch of honey out of the apiary and into the tank before the first snow. I uncap the season's last two frames, spin out their sweet treasure, put the extracted supers away, clean up, turn off the lights, and walk out into the poetry of a crisp Autumn night. I remember that someone once asked me why I bother with bees. I replied that I love beekeeping. It's as simple as that. I love it! What further answer would suffice? I do it because I love it. Is there any better reason?