

P2

JUL 2001



Bee Culture

Pollen –

Make No Claims ... 14

Lima Beans Are Good

For Bees ... 17

Summer Splits for

Overwintered Nucs ... 24

Bee Blowers, Tips

And Tricks ... 31

FEATURES

SMALL HIVE BEETLE 7
Interesting observations from those who live with it all the time in South Africa.
G. D. Tribe

LIMA BEAN POLLINATION 17
Lima beans serve as a nectar source in mid-summer dearths in several parts of the country.
Dewey Caron

SUMMER SPLITS FOR OVERWINTERED NUCS 24
This Summer, get ready for next Spring – and have lots of strong, healthy colonies.
Roy Hendrickson

BLOWIN' IN THE WIND 31
Tips and tricks for using a bee blower.
Bob Kornely

MURPHY'S LAW 35
If it can go wrong, it will, and there's lots of things in beekeeping that will.
Ann Harman

PRINCIPLES OF BEEKEEPING BACKWARDS 37
Forget all you know; these 10 Principles will revitalize your beekeeping. Tales from another side.
Charles Martin Simon

Subscription Information

U.S., one year, \$20; two years, \$38. Newsstand price: \$2.50. All other countries, (U.S. Currency only), \$10.00 per year additional for postage. Send remittance by money order, bank draft, express money order, or check or credit card. Bee Culture (ISSN 1071-3190), July 2001, Volume 129, Issue 7, is published monthly by The A.I. Root Co., 623 W. Liberty Street, Medina, OH 44256. Periodicals Postage Paid at Medina, OH and additional mailing offices.

Advertising

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

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

Published by The A.I. Root Co. Copyright© 2001 by The A.I. Root Co.
All rights reserved.



Teasel was once a commercial crop in Ohio. The varieties grown were hybrids, selected for overly large flower heads. These were harvested when the flower head dried down in the fall and the heads, with their unique curved spines, were used to card wool. No longer a crop, the vestiges of the escapes back then still inhabit vacant land today. Eagerly sought by bees in mid-summer, the honey is light and mild, but mostly is a minor part of our Summer wildflower crop.

DEPARTMENTS & COLUMNS

THE INNER COVER 8
Hoof and Mouth, and everything inbetween.
Kim Flottum

WISE GUY 11
Predictions.

DO YOU KNOW? 13
What do you know about social insects?
Clarence Collison

BEEKEEPING IN THE DIGITAL AGE 14
Pollen as a value-added product: Make no claims.
Malcolm T. Sanford

BEE CULTURE'S BEEYARD 20
It's a wonderful day in the beeyard.
James E. Tew

MAILBOX - 5; JULY HONEY PRICES - 12; GLEANINGS - 41; CLASSIFIED ADS - 45

Publisher – John Root, Editor – Kim Flottum,
Production Coordinator – Kathy Summers,
Circulation & Advertising – Dawn Feagan,
Publications Sales – Jim Thompson

Contributors

Richard Taylor • Mark Winston • Clarence Collison
Ann Harman • James E. Tew • Malcolm T. Sanford



KEEP IN TOUCH

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

MAILBOX

Good Wood Article

I wanted to send a note of congratulations to Dave Heilman and Jim Thompson on their extremely thorough piece on the quality and fit of the bee equipment available today. After having done the very first article on woodenware, entitled "Wooden World" for the February, 1992, *Gleanings in Bee Culture*, I can appreciate the work, time and effort that went into their article. Their article went way beyond where I was able to go, almost 10 years ago now.

Articles like these are a great service to beekeepers. They provide real and practical information we can all use.

Keep up the good work!

Jeff Ott
Berthoud, CO

Cost Of A Talk

We have been beekeepers in Maryland for approximately the last 12 years. We have been asked from time to time to bring observation hives into classrooms and do exhibits for various organizations. While we don't mind doing any of this, we have found this rather expensive. Our question is: Does anyone else do this sort of thing and, if so, what do they charge? With the cost of gas going up and

up, we no longer can absorb the whole cost for this. We don't mind doing classes for free, but businesses have started contacting us and we would like some idea of what is a fair cost.

Thanks you very much.

Bill and Mary Bartholomy
Cordova, MD

Editor's Note: My answer is this: Actual costs . . . mileage at 33¢/mile, whatever else costs for this - meals away from home and the like; figure 5 demos/year, over three years, to pay for your equipment (depreciation); and then labor - preparation time, travel and demo time and put-away time . . . and opportunity cost . . . could you have been making more/some money doing something else. And of course labor in \$/hr. Balance that with the enjoyment income you get what would you pay to have this much fun somewhere else, and of course do you sell honey at the school or business that you would not have been able to sell otherwise Bottom line however is less precise. People pay for what they get . . . if you don't charge anything, what are you worth? All of the above is good for accountants, but I'd not do it for a penny less than \$50. And \$75 or \$100 isn't out of line when you consider a business making money from your work. Don't forget insurance costs either. What about it? What do you non-professional demonstrators charge?

Fit The Needs

I enjoyed your column on beekeeping meetings. Beekeepers will come out in numbers if they know the BS level will be low. They want GOOD information.

I have seen first hand what happens when information fits the needs of beekeepers. Beekeeping is very complex these days and we are in a constant flux. I gave a talk a couple of years ago at Shagit Valley College and could see some of the questions that were bothering beekeepers at that time. They could see the quality of our queens going down, but did not understand the why. That in itself is complex. Genetic diversity is a big part of it and I had some hand outs on Steve Shepard's work on DNA sampling of our honey bees. The fact that we have only five families of bees in the U.S. was a real eye opener for many. I enjoyed the discussion myself and the fact that we moved out into the parking lot, in the dark, after we had to leave the building at 9:00 p.m. People will feed if the food is right.

You keep up the good work. Someday I may see you, we seem to be on the same page.

Roy Nettlebeck
Tahuya, WA



THREE BANDED ITALIAN QUEENS

SUMMER QUEEN PRICES AVAILABLE JUNE 1ST - NOVEMBER
Caged fresh from our yards. Available all summer and fall.



1-9
\$9.00

10-24
\$8.00

25-99
\$7.00

100-up
\$6.00

Queens Clipped \$1.25 ea. • Queens Marked \$1.25 ea.

Queens Insured when shipped First Class Mail, Priority Mail and Express Mail. Applicable shipping charges apply.

THE WILBANKS APIARIES, INC. Box 12 • Claxton, GA 30417 • 912-739-4820
FAX: 912-739-4821

SMALL HIVE BEETLE

Thoughts from South Africa

Reprinted With Permission From *The South African Bee Journal*

G D Tribe



The discovery in 1998 of the small hive beetle (SHB) which is native to sub-Saharan Africa, in the southeastern USA and the problems it presents to beekeeping there (Elzen *et al.* 1999), brings to mind a story told by the late Dr. Lundie over 20 years ago. He was sitting in the shade of a tree in his garden in Pretoria, South Africa on a hot Saturday afternoon when he saw a flailing ball of insects moving through the air at about waist height. It crashed into the front of his hive and when he ran up to it, he saw that it was a swarming mass of small hive beetles covering the entire front and entrance of the hive. The 'ball' paused momentarily at the entrance before 'melting' inside. Within a few hours

the bees absconded and the small hive beetles had taken over the hive.

Although this was an unusual occurrence to witness, the following observations made many years later could explain how this could have come about. A hive containing brood from which the bees had absconded had been brought back from the Springbok flats to Pretoria where it was found to be riddled with the larvae of the small hive beetle. The hive was placed on an upturned lid and the combs were individually shaken free of the SHB larvae, which were dropped onto the lid. By the time this operation was complete, the lid was filled with thousands of larvae almost to the top which

was 40 mm deep. As Lundie (1940) recorded the pupa may remain in the soil from 8-60 days, had these larvae been allowed to pupate normally in the sand beneath the hive, it is quite conceivable that on emergence as adults, a climatic cue such as sustained warm weather could cause them to emerge *en masse*, aggregate and move away in a swarm. They would presumably have traveled as far as the nearest beehive. From this description it would appear that the beetles' location of the hive, presumably by olfactory means, was acute. As a nonsocial insect species, how the beetles maintained their cohesiveness as a swarm while managing to move in a goal-oriented direction towards the hive, remain unexplained.

The beetle is well adapted for living inside a beehive. The size of the beetle is very important and affords it protection from the bees. Being one-third the size of a worker bee, when it has been confronted by a worker it merely pulls in its appendages and holds itself tightly to the surface. To sting it, the bee must relinquish any hold it may have on the beetle and move forward to bring the sting into play. When this happens, the beetle merely scoots out from beneath the worker. Its size is also important in that it is easily able to enter individual cells where it may help itself to eggs, honey or pollen and to hide away in cracks and crevices within the hive where the bees are unable to get at them. Its round 'dome' prevents bees from getting a hold on it and as would be expected, its fine pubescence renders it virtually smooth to aggressive bees.

Only rarely when the beetle is turned upside down are the bees able to get a grip on its legs and may throw it out. This is often seen when hives have been worked and the beetles have been forced out of their hiding places and must scamper over the comb. These beetles, some of them injured during the manipulations, are then later thrown out of the hive. Sometimes an attempted sting marks the beetle with some venom and this elicits a reaction from other bees wherever it runs. Not even after many months of working with observation hive in Pretoria did I once see a beetle thrown out of the hive under natural, undisturbed conditions. Where the bees cannot extract the beetles because the crevice is too narrow, they

Continued on Page 9





INNER COVER

The U.K., Brazil, Qatar, The Netherlands, Uruguay, Kuwait, Argentina and Mongolia all have hoof and mouth disease to deal with. Depending on the country the disease is being handled in one of several ways. Some, like the U.K., have undertaken massive depopulations (massive by their standards, and certainly by the standards of any one farmer without a herd now). These animals are, or were, both those found to be infected,

and any on nearby farms. Moreover, tourists and even local residents were denied access to areas both found to be infected, and any surrounding land. Officials did not, and do not want the disease to spread anymore than necessary.

This monumental effort, exercised at great individual and government expense (not to mention the peripherals of tourist money lost and other not-so-easily-seen costs) has nearly halted the spread. By the end of May only a handful of new cases were being discovered each week. But still, only a tiny percent of the U.K.'s susceptible animals (cattle, goats, elk, bison, deer, swine, sheep, llamas) were destroyed.

Other countries are reacting a bit less drastically, only depopulating the infected animals, and vaccinating those in nearby farms. The cost is significantly less, both to the farmer and the government required to control the disease.

The downside of this is that the infection doesn't go away but remains in check (like AFB spores), and the international trade community places some restrictions on how and what you can sell over the border.

And, there are some places where even less is being done because of funding or other priorities.

The U. S. has been lucky, so far. Hoof and mouth disease hasn't been imported with infected live animals or in contaminated meat. No tourists have brought it back in a ham sandwich, on their shoes or clothes. Yet.

And, USDA has stepped up inspection so maybe it won't. Pray that it doesn't. No, bees don't get it. It's not in honey. But think about this...

What happens if it's found? Like the UK, infected farms are suddenly off limits to anybody who doesn't live there. Bees on the land? Forget it. You're not driving there for love or money. Not to move bees, not to work bees, not to harvest honey. Nope. Not at all. And, probably, not even on land in farms near the infection. Maybe whole counties are quarantined, or groups of counties, or entire regions of the country. No beekeepers in, no bees out.

Some states are planning ahead for such an emergency because the financial devastation would be catastrophic. The last I heard immunization isn't an option. Just depopulation. And that would be monumental. There's a moderate sized feed lot in South Dakota, not the biggest in the state, and certainly not the nation. An analysis there gave these figures. If all of the cattle in that feed lot had to be slaughtered and buried (burning is too big an

environmental problem, but ground water contamination is almost as big a problem), the ditch to bury them would be 20' wide, 15' deep... and 13 miles long. And that's just one feed lot in one state.

To accomplish this would require significant manpower and money. Some states have already notified the National Guard that this would, indeed, be a state-wide, if not national emergency and they would be called upon to assist . . . killing, burying, guarding, inspecting.

No, the Feds, and the states won't fool around with this if it shows up here, anywhere. So how does this affect you? Are your bees on land associated with cattle, or any of the animals listed above? Are you sure? What happens if you can't get there for four or eight weeks?

Would you and your bees be caught in the middle of the killing fields?

So what happens to the price you sell your honey for, now that the wholesale price at the packer level has changed? A barrel of ELA went from about \$.55 to about \$.80/lb. overnight. You may have been getting loan rate so you were actually getting about \$.65 or so, but still, that's a \$.15/lb difference.

Packers will have to deal with this somehow. Those with contracts into the future are in the same situation California is in when buying electricity... No matter what they have to pay for it they can only sell it for a set price. Of course some have already told their customers there will be a price increase because of government intervention and supply shortages (which is wrong because the supply hasn't changed by a single drop) in the honey market. Somehow though, it never seems to work the other way, does it? There are exceptions, packers that actually consider beekeepers first, so if you know one, cherish that relationship.

Continued on Page 39

Hoof & Mouth And What's In Between

BEETLE ... Cont. From Pg. 7

simply form propolis walls around the beetles and confine them in this space. The African bee is known for its prolific use of propolis and one of the evolutionary pressures that brought this about could have been the need to cover all crevices within the nest to deny access to the small hive beetle. This behavior appears to be much reduced in the European honey bee and may partly explain why the small hive beetle has become a major pest in the USA. Although the most important use of propolis is perhaps as a means of conserving water needed by developing brood (Mobus 1972), it also has a function in the defense of the hive, mainly by restricting entrances and thus enabling better protection from various predators and other honey bees.

The large hive beetle, *Hoplostomus fuliginneus* (Cetoniinae), has a thick cuticle which makes it impervious to all attempts by the bees to remove it from the hive. Their size, numbers in a beehive, and the subsequent damage that they cause can be considerable and it is fortunate that they are confined largely to the northern Bushveld areas of South Africa (Johannsmeier 1980, 1981; Donaldson 1989). The bees' final response to a large hive beetle invasion appears to be an attempt to neutralize them with propolis. Many beetles removed from hives have large lumps of propolis attached to their bodies much like 'callosities' some almost as large as the beetle itself. The elytra are often fused together with propolis and

it is unlikely that such beetles could every fly again. So perhaps the propolis treatment does cause some mortality.

The continual harassment of the small hive beetle by worker bees and their confinement in their narrow crevices also prevent them from mating, because this would allow the bees to get at the vulnerable underside of the male. But within hours of bees having absconded, mating beetles may be seen on combs of pollen and deserted brood. Other beetles feverishly duck in and out of cells while presumably laying eggs. **EC**

References

Donaldson, J. M. I. 1989 *Hoplostomus fuliginneus* (Coleoptera: Scarabaeidae): life cycle and biology under laboratory conditions, and its occurrence in beehives. *Coleopterist's Bulletin* 43 (2): 177-182.

Elzen, P. J., Baxter, J. R., Weterevelt, D., Randall, C., Delaplane, K. S., Cutts, L., & Wilson, W. T. 1999. *Field control and biology studies of a new pest species, Aethina tumida Murray* (Coleoptera: Nitidulidae), attacking European honeybees in the Western Hemisphere. *Apidologie* 30:361-366.

Johannsmeier, M. F. 1980. *Beetles that eat bee brood*. *South African Bee Journal* 52(5):3-5.

Johannsmeier, M. F. 1981. *Further notes on large hive beetles*. *South African Bee Journal* 53(2):4-5.

Lundie, A. E. 1940. *The small hive beetle Aethina tumida*. *Science Bulletin* No 220, Department of Agriculture and Forestry, Pretoria. 30pp.

Mobus, B. 1972. *The importance of propolis to honeybees*. *British Bee Journal* 100:198-199, 246-248.

BEE SUIT BREAKTHROUGH

- CALLED "MOST FUTURISTIC" IN BEE CULTURE DEC '96 ISSUE & ON FRONT COVER
- TOTALLY VENTILATED, COOLER, DRYER
- VIRTUALLY STING FREE, BEE-TIGHT
- ALL QUALITY, 1/4" THICK, THREE BRASS ZIPS
- TESTED ON AFRICANIZED BEES

Up to 5'11" or 165 lbs. \$159 P.P. State Size

Up to 6'2" or 200 lbs. \$179 P.P. State Size

Up to 6'6" or 300 lbs. \$199 P.P. State Size

WITH DETACHABLE HOOD & VEIL, GLOVES - M, L, OR XL

MADE IN U.S.A. - Send For Free Info - U.S. Patented

1 (504) 737-3901

GOLDEN BEE PRODUCTS - DEPT. C.

801 LITTLE FARMS AVE. • METAIRIE, LA 70003

UNCAPPING PLANE



**ELECTRICALLY HEATED!
REPLACEABLE ELEMENT!**

Adjustable blade for cutting depth!

Comfortable Handle!

A Safe, perfect Way to Uncap!

ONLY \$85.00 delivered

Now with in-line cord switch.

MAXANT INDUSTRIES, INC.

P.O. Box 454 G • Ayer, MA 01432

(978) 772-0576 • FAX (978) 772-6365



Bee Cool with a **Bug Baffler®**

SM	90-175#	\$38.00 + \$5.00 s/h
L/XL	175-235#	\$38.00 + \$5.00 s/h
XXL+	over 235#	\$40.00 + \$5.00 s/h



1465 North Winchester
Olathe, KS 66061-5881
800-547-1392
(913) 768-8967
FAX (913) 768-8968
www.mid-conagri.com



This is a comfortable, roomy one-piece shirt with an attached headnet. The fabric is 100% nylon screening material in a green color. The mesh provides protection and ventilation!



Ask for our free catalog!



**Cowen
Manufacturing**

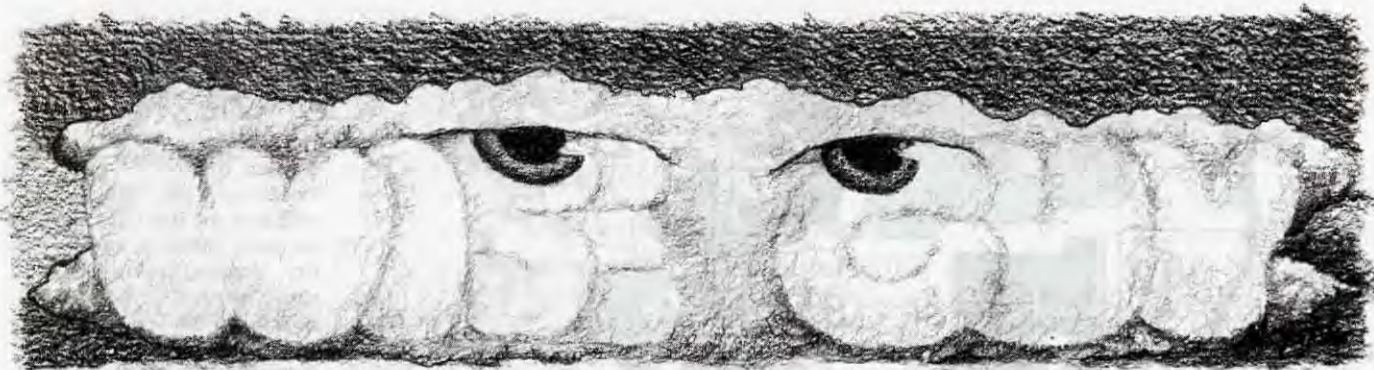
716 Honey Lane • P.O. Box 399

Parowan, Utah 84761

800.257.2894

435.477.8902

FAX 435.477.3569



The action by the Commerce Department on the antidumping suit has finally brought some relief to U.S. honey producers. It appears white honey will sell at or above 80¢/lb. and dark honey at or above 65¢/lb. ELA will be inbetween somewhere.

Is this Good!? Of course it is! And, it should be a victory for the entire industry, not just producers. It allows the shelf price to rise so packers should take a permanent increase also.

If you look at the general income of first the producer side of the industry we should realize at least \$40,000,000 additional revenue and perhaps as much as \$50,000,000 to \$55,000,000.

These seem like unrealistic numbers, don't they? But let's see what we have lost and compare. The Texas A&M honey industry economic study indicates that we need at least 69¢ to break even (without depreciation). That means the pre-antidumping honey prices were 15¢ below that figure, which means we were losing \$30,000,000 of equity and cash per year since 1997 or \$150,000,000 in sales.

So what else can you expect now that the antidumping suit has moved ahead? First, you may actu-

ally receive a phone call from a packer wanting to purchase your honey. He'll be returning your call from last Fall, or he is wondering when he can pick up the honey he promised to buy from you three years ago at 52¢ but just never had a truck in the area. From a few packers you'll get a spiel on how the industry cannot take this large jump in price so could you see your way to selling your honey at a lower, more competitive price? Personally, I need to replace three trucks each with over 650,000 miles, and make a bunch of repairs I could not afford when I had to sell my product at 50¢, or less, per lb. But don't ignore every packer. Keep close those that don't argue about price, payment or quality. They'll be here when things turn around.

The next item we will see showing up on shelves and warehouses is honey from some exotic land that just happens to resemble honey that comes from the two dumping countries. We need everybody - producers and packers - to run this down and act upon it. Illegal imports hurt everybody, and ESPECIALLY packers who are at a disadvantage to the crooks who do this. I understand if we can prove this is happening someone will go to jail.

And of course there will be an-

other letter to all the editors of all the beekeeping magazines by some beekeeper telling us that unrealistic honey prices are hurting our industry. Last time this beekeeper wrote a letter telling us that during the antidumping action prices got too high and hurt our industry. Which part of the industry did it hurt, beekeepers or the marketers? Did any beekeeper hold a gun to the head of a honey marketer making him sell honey at a low price or did he just accept a price offered to him?


Last thing. There will be talk about needing the Honey Loan Program in the farm bill. Yes we do. The trust between packer and producer is pretty much gone. We need to have the ability to market our product in an orderly fashion. That is why we need an Loan Deficiency Payment, plus non-recourse loans. If we don't have those tools the marketers will bring in honey from Mars and tell us how good it is, but they'll still need a small amount of honey from us to blend with their product.

How can we this be solved? It's easy, really. Packers: Buy the 200,000,000 lbs. produced in the U.S. each year and the price will rise and each and every link in the "honey chain" will make money.

Wise Guy

QUEENS

Bee Happy Apiaries



BEE HAPPY APIARIES

8307 Quail Canyon Road
Vacaville, CA 95688 • (530) 795-2124

All Queens Bred for Hygienic Behavior and Honey production - remember - half their ovaries tied behind their backs - JUST TO MAKE IT FAIR!

NEW WORLD CARNIOLANS

April	May thru Summer
1- 10 ... \$11.00	1 - 10 ... \$10.00
11 - 24 ... \$9.50	11 - 24 ... \$8.50
25 & up ... \$8.50	25 & up ... \$7.50

PACKAGES - PICK UP ONLY

We want your business!

Italian Queens & 5-Frame Nucs

D & J APIARY, INC.

13828 Yale Hammock Rd.
Umatilla, FL 32784
Ph. 352.669.3498
FAX 352.669.8466

Call for prices and Availability

JULY - REGIONAL HONEY PRICE REPORT



Region 1.

Prices up. Cool, dry Spring has helped early flows. *Varroa* pressure average to above, with reports of Apistan resistance and Terra resistance. Canning jars not popular in the region.

Region 2.

Prices steady to up a bit. Several reported Post Office slow delivery problems with queens this year. Dry weather didn't help early crops, but *Varroa* pressure is down so far. Resistance to Apistan reported by some. Pints sell for about \$3.75, quarts for \$6.10.

Region 3.

Prices steady so far. Delayed deliveries by the Post Office reported for both packages and queens. A cool, dry spring has produced only average flows so far with average *Varroa* pressure. Resistance to Apistan and Terra reported. Pints and quarts not common.

Region 4.

Prices steady so far. Weather problems vary and cool, dry areas had reduced early crops and milder areas on schedule. *Varroa* pressure average to down, but several report resistance to Apistan. Pints average \$4.65, quarts \$6.75.

Region 5.

Prices inching up. Cool, dry weather slowed development early, but little *Varroa* pressure so far. Some resistance showing up to both Apistan and Terra. Pints about \$5, quarts about \$8.

Region 6.

Prices steady but increasing a bit. Cool, dry weather kept early development about on schedule. Little *Varroa* problems. Jelly jars \$2.00, 1/2 pints \$2.75, pints \$3.60, quarts \$6.50.

Region 7.

Prices steady to down just a bit. Wet, too warm then too cold and more wet put a crimp on early development. Too cool lasted into June. Early *Varroa* pressure light, but some resistance to Apistan reported, and to Terra also. Jelly jars \$2.80, 1/2 pints \$3.00, pints \$3.90, quarts \$5.20.

Region 8.

Prices up a bit. Too hot, too cold and too dry have messed up early buildup, mostly too dry. *Varroa* pressure light to none, so far. Pints \$3.30, quarts \$5.66.

Region 9.

Prices steady, so far. Average to wet weather has helped early flows this Spring but *Varroa* pressure evident. Some resistance to Apistan showing up. Pints \$3.30, quarts \$5.85.

Region 10.

Prices steady. Cold, cold, and wet mean, maybe, an average crop at best. *Varroa* pressure nonexistent, mostly.

Region 11.

Prices up a bit. Mixed weather has things all over the place, some good, some not. Rains have helped. *Varroa* pressures little noticed, so far.

Region 12.

Prices up for most things and getting better. Warm, dry weather has helped buildup. *Varroa* pressure causing some problems with resistance to Apistan. Pints \$5.00, quarts \$8.50.

	Reporting Regions												Summary		History	
	1	2	3	4	5	6	7	8	9	10	11	12	Range	Avg.	Last Month	Last Yr.
Extracted honey sold bulk to Packers or Processors																
Wholesale Bulk																
60# Light (retail)	70.58	73.75	74.00	75.00	75.00	62.50	59.86	64.20	65.50	77.50	85.25	63.00	45.00-140.00	71.50	68.73	70.73
60# Amber (retail)	68.13	65.69	68.00	71.20	70.50	63.00	64.67	58.00	60.00	62.00	80.75	83.33	51.00-130.00	68.99	67.33	67.65
55 gal. Light	0.60	0.70	0.64	0.60	0.65	0.65	0.60	0.64	0.64	0.62	0.72	0.70	0.48-0.79	0.64	0.59	0.64
55 gal. Amber	0.55	0.50	0.62	0.61	0.58	0.51	0.55	0.60	0.56	0.62	0.61	0.62	0.42-0.85	0.58	0.58	0.59
Wholesale - Case Lots																
1/2# 24's	28.95	28.98	31.81	32.62	31.81	25.00	27.68	31.81	30.00	31.81	24.00	44.40	21.00-44.40	30.02	28.86	29.95
1# 24's	41.88	40.59	48.00	44.76	38.00	41.00	40.13	42.80	45.00	42.00	51.00	51.60	24.00-56.40	43.07	42.94	43.07
2# 12's	38.59	38.78	45.60	42.85	40.00	36.60	36.43	41.40	42.00	35.40	46.00	40.50	29.40-52.58	39.65	38.89	39.17
12 oz. Plas. 24's	35.93	34.46	35.60	35.61	35.00	32.80	34.47	36.40	40.00	35.60	42.00	42.07	26.00-49.40	36.79	36.39	36.05
5# 6's	42.42	44.19	54.00	45.94	47.20	47.20	39.27	39.00	48.00	41.25	50.00	47.20	30.50-67.50	43.59	42.03	41.34
Retail Honey Prices																
1/2#	1.76	1.40	2.83	2.17	1.19	1.87	1.60	1.68	2.00	1.49	3.00	2.49	0.95-3.00	1.81	1.77	1.80
12 oz. Plastic	2.25	1.82	2.90	2.44	2.43	2.49	1.91	2.15	2.50	2.08	3.50	2.35	1.19-5.00	2.26	2.32	2.27
1 lb. Glass	2.77	2.29	3.00	3.03	2.88	3.44	2.33	2.71	3.50	2.39	4.45	3.13	1.40-5.00	2.81	2.82	2.74
2 lb. Glass	4.39	3.92	4.80	4.83	4.20	5.69	3.76	4.71	5.50	4.21	4.56	4.75	2.19-7.00	4.49	4.61	4.59
3 lb. Glass	6.00	5.75	7.80	6.95	5.12	7.39	5.42	6.39	5.96	5.19	6.99	5.89	3.09-9.39	6.20	6.23	6.33
4 lb. Glass	7.19	6.85	7.82	8.81	7.82	7.05	6.67	7.99	6.50	8.50	7.91	7.82	3.89-12.00	7.56	7.24	8.06
5 lb. Glass	9.62	9.94	11.00	10.09	10.00	11.23	8.72	10.98	9.00	8.95	11.95	11.23	7.89-16.00	9.79	9.50	9.30
1# Cream	3.22	3.29	4.25	3.51	4.00	3.15	2.69	3.06	3.90	3.04	5.25	3.17	2.25-6.50	3.26	3.36	3.21
1# Comb	4.32	4.10	3.60	4.45	4.64	4.25	4.07	4.36	4.64	4.75	4.50	5.25	3.95-7.50	4.47	4.46	4.38
Round Plastic	3.68	3.15	3.60	4.50	4.10	4.00	3.67	3.83	3.85	3.93	4.62	3.50	2.95-5.00	3.84	3.78	3.85
Wax (Light)	2.36	2.54	2.70	2.24	2.25	2.13	1.79	1.95	2.77	2.50	2.05	3.75	1.00-3.00	2.39	2.58	2.57
Wax (Dark)	8.16	2.26	2.65	2.06	0.90	1.83	1.58	1.05	2.10	1.40	1.75	2.25	0.90-2.70	2.19	2.15	2.32
Poll. Fee/Col.	37.57	41.75	40.00	37.20	30.00	32.50	40.56	40.00	20.00	37.92	50.00	35.67	20.00-55.00	38.75	38.33	38.96

? DO YOU KNOW ?

Social Insects

Clarence Collison

Mississippi State University

Honey bees are social insects with the society normally consisting of three castes: workers, drones and a queen. Each caste is responsible for various responsibilities within the society. The activities of honey bees are regulated by many different factors associated with the environment in which they live, interaction between members of the society and their internal physiology. The social structure of the colony is based on the prin-

ciples of division of labor, kin recognition and specialized reproductive castes. Numerous forms of communication are used within the honey bee colony to integrate their various social activities.

Please take a few minutes and answer the following questions to determine how familiar you are with the social structure and individual roles of bees within the colony.

The first ten questions are true and false. Place a T in front of the statement if entirely true and a F if any part of the statement is incorrect.

1. ___ Adult honey bees serve as a reservoir of sacbrood virus.
2. ___ Individual worker honey bees are unable to survive by themselves.
3. ___ All colony activities are controlled by the queen.
4. ___ Queen honey bees normally live longer than either the drone or worker caste.
5. ___ Each bee has a tendency to express different behaviors according to their genetic profile, physiological state and external stimuli present at the time.
6. ___ Adult honey bees show aging characteristics.
7. ___ Colonies with laying workers will eventually die if the beekeeper does not intervene.
8. ___ Honey bee queens are unable to feed themselves.
9. ___ A colony preparing to abscond initiates queen rearing activities before leaving the nest site.
10. ___ A honey bee colony is composed of a large number of subfamilies of workers.

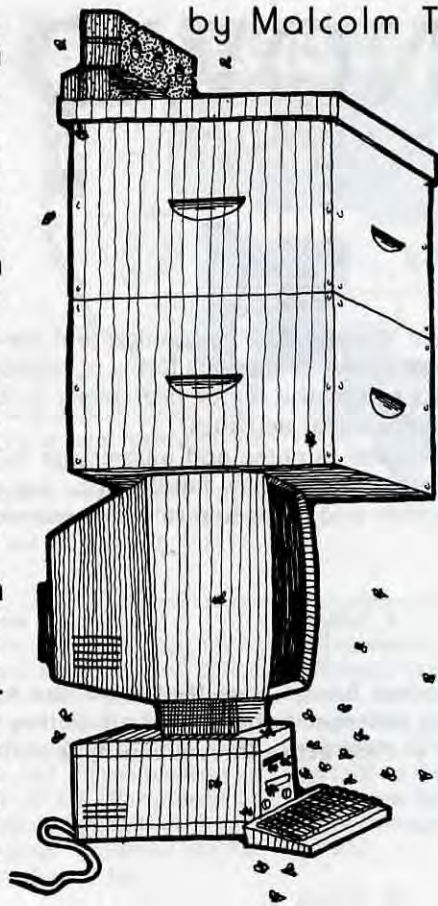
(Multiple Choice Questions, 1 point each)

11. ___ The last in-hive duty that may be assumed by a young worker before foraging in the field is:
A. Comb Builder
B. Receiving Nectar
C. Cleaning Cells
D. Nurse Bee
E. Guard Bee
12. ___ The foraging population of a colony is composed of scouts and workers that collect nectar and pollen. The proportion of the foraging population that searches for new food sources (scouts) is approximately:
A. 20%
B. 1%
C. 15%
D. 10%

13. ___ Worker honey bees that have the same mother but different fathers are half sisters and have ___ of their genes in common by descent.
A. 25%
B. 50%
C. 75%
D. 100%
E. 88%
14. ___ House bees typically become foragers when they are ___ days old.
A. 15
B. 21
C. 18
D. 24
E. 30
15. Name three activities associated with the cleaning of brood cells by worker honey bees. (3 points).
16. Queen honey bees are occasionally closely surrounded, mauled and even stung by their own workers. What is this behavior called and under what conditions will it normally occur? (2 points).
17. Please explain why honey bees are considered to be social insects. (3 points).
18. What explanation would you have for a hive that was ejecting adult drones in the middle of the summer? (1 point).
19. Please list two ways in which honey bees reduce the temperature in the hive when it becomes too warm. (2 points).

ANSWERS ON PAGE 40

by Malcolm T. Sanford



The April 2001 *Bee Culture* contains two articles providing advice to beekeepers on preparing and marketing bee-collected pollen. Lloyd Spear discusses trapping and preserving pollen that will be fed back to honey bee colonies. He says that this is an **important management tool** and should be considered in spite of risk of contamination by either bee disease organisms (bacteria and fungi) and/or pesticides. These risks can be minimized, Mr. Spear says, by taking certain precautions. He then discusses how one might process the remainder of the pollen to sell as a value-added product for human consumption. He concludes from his financial analysis of a single hive producing both pollen and honey the following: "Adding \$200 from pollen to the \$150 from honey results in \$350, an increase of 230% in cash from the hive."

Ann Harman in the same issue describes packaging and marketing pollen for human consumption. First she says it must be dry and clean before being packaged and marketed. Of special significance is information on the label. She suggests using "pollen," "bee pollen," or "honey bee pollen." But she also conservatively advises those marketing the product to keep themselves and their pollen on safe ground by making no health claims. Thus, she says one can say their pollen is "good" but not "good for you." A potential customer may well ask what benefits are obtained from eating pollen, she concludes. "You need to think about such questions beforehand and have carefully thought-out answers to them. *Make no claims.*"

How can one reconcile Ms. Harman's advice above

Pollen as a Value-Added Product: Make No Claims

when faced with the information available on the World Wide Web that not only makes claims, but sometimes those that can only be described as beyond one's wildest imagination. The examples are numerous. Pollen is called the "World's most perfect food and food fit for a queen" on the **Enviro Bee site**. The **Pollen Man Products site** says: "Pollen is called 'THE WORLD'S FIRST HEALTH FOOD' because its healing powers were first described in ancient writings, and a 'SUPER FOOD' because pollen contains nearly every known nutrient required for a balanced human diet: 22 amino acids, 27 minerals, most of the known vitamins, and many enzymes. It is 35% protein, 40% carbohydrate, and 5% fat. It lacks only roughage and water for a totally complete and balanced human health and nutrition."

The **Symmetry catalog site** says that "Bee pollen is considered a potent healer, a source of regenerative power which can pervade the body. The bee pollen is said to have been the secret "ambrosia" eaten by the ancient gods to acquire eternal youth. Today, scientists realize that bee pollen does contain healing properties that create a feeling of rejuvenation within the body. New scientific discoveries reveal how bee pollen has been able to extend the life span as well as heal ailments. Bee pollen bursts with easily assimilated protein and lecithin, which nourish the brain and nervous system." Pollen is even being marketed for **horses**. "Would you like to know the best-kept secret of the top equine professional trainers? The answer is the **WINNERS Bee Pollen Company**. **WINNERS** has been making the highest quality equine supplements for over twelve years now, and the top trainers in all the equine sports use our products."

It is thought that although bee-collected pollen is considered a good food for honey bees and perhaps other insects, this is not necessarily the case for humans. One potential problem is that the physical and chemical structure of pollen simply does not allow for easy access to its nutritional resources. The **Beelieve site** attempts to maneuver around this issue: "Much of the good in bee pollen is NOT available to the human digestive system. Most other granulated bee pollens on the market are between 3% to 30% available to your body. That's very low bioavailability! The solution is our patented process. We bring to you a new invention whereby the bioavailability of pollen cells is dramatically improved, thereby making the pollen cells digestible."

Most of the above information found on the referenced sites is not substantiated by data. Thus, there are few if any references to medical or scientific studies, nor is the above "patented process" by which bioavailability is "dramatically improved" described in any detail. Does that mean these claims are bogus? Not necessarily. For example, the following is found on the site maintained by the **American Apitherapy Society**, authored by an M.D.: "More than 40 research studies document the therapeutic efficacy and safety of bee pollen. Clinical tests show that orally ingested bee

pollen particles are rapidly and easily absorbed—they pass directly from the stomach into the blood stream. Within two hours after ingestion, bee pollen is found in the blood, in cerebral spinal fluids, and in the urine." Probably to be more accurate the author meant to say the nutrients from pollen would be found in the body, not the pollen itself.

Just when one is about to conclude that maybe there is something to these bee pollen claims, however, it is instructive to look at the Quackwatch site authored by **another M.D.** "Promoters call bee pollen 'the perfect food' and stress that it contains all of the essential amino acids and many vitamins and minerals. However, none of these nutrients offers any magic, and all are obtained easily and less expensively from conventional foods. No scientific study supports any claim that bee pollen is effective against any human disease. The few studies that have been done to test its effect on athletic performance have shown no benefit." In contrast to the sites making the claims, several references are mentioned. Most refer to the potential danger that allergy sufferers might face by ingesting pollen.

The Quackwatch site also includes a history of federal enforcement actions against those making claims about bee products.: "In 1992, the CC Pollen Company and its owners (Bruce R. Brown, Carol M. Brown, and Royden Brown) agreed to pay \$200,000 to settle charges that they falsely represented that bee-pollen products could produce weight loss, permanently alleviate allergies, reverse the aging process, and cure, prevent, or alleviate impotence or sexual dysfunction. The company and its owners were also charged with falsely stating that bee-pollen products are an effective antibiotic for human use and cannot result in an allergic reaction. Under the agreement, the company and its owners were prohibited from making all of these claims and are required to have scientific evidence to support any other health-related claims about any other product for human consumption. Some of the false claims were made in infomercials that were misrepresented as news or documentary programs, even though they were paid ads. During one infomercial, entitled 'TV Insiders,' host Vince Inneo falsely implied that the program was part of a series of independent investigations. The products offered during the infomercial were Bee-Young, Pollenergy (to 'restore missing energy'), Royal Jelly ('to keep sexually active at any age'), President's Lunch, and First Lady's Lunch Bar. The infomercial producer TV, Inc., signed a separate consent agreement."

In spite of the above agreement, Quackwatch concludes, Mr. Brown continued to promote bee pollen illegally until he died in 1994. His legacy, however, appears to live on as one can only surmise from the current **CC pollen** web site, which still makes claims although somewhat toned down.

Like those making fringe claims about the value of pollen as a health aid, the Quackwatch folks might also have gone to far in their rebuttal efforts. A more balanced approach is found in the FAO document, recently published by Dr. Rainer Krell. **Value-Added Products From Beekeeping**, which is also found on the Web. In the chapter on pollen, Dr. Krell says: "Pollen is frequently called the 'only perfectly complete food' High performance athletes are quoted as eating pollen, sug-

gesting their performance is due to this miracle food, just as the 'busy bee' represents a role model for an active and productive member of society. Using suggestive names, labels and descriptions in marketing of various products containing pollen sometimes reach almost fraudulent dimensions, creating false hopes and expectations in people, often connected with high prices of the product. Such practices are untruthful, unethical and should be avoided.

"It is however, often difficult for a lay person to verify the numerous claims, particularly those backed up with so-called reports from 'doctors'. Conversely, it does not always take a 'scientific' study to prove that a food (or substance of herbal origin) has a medicinal or otherwise beneficial effect. Many times, modern science is not willing or able to prove beneficial effects according to its own rigid standards, methods and technologies. However, as a whole, caution should be exercised in accepting the many claims made to the credit of pollen and for that matter also for the other products incorporating products from the bee hive."

Thus, Dr. Krell provides in depth discussions of the definition, physical characteristics, composition and physiological effects of pollen. He lists various non-scientific claims and reports of benefits from consumption of bee-collected pollen, including those concerning digestive assimilation, athletic performance, appetite, sexual prowess, anemia, high blood pressure, and ulcers. At the same time, he discusses scientific evidence: "Supplementation of animal diets with pollen has shown positive weight gain and other beneficial effects for piglets, calves, broiler chickens and laboratory cultures of insects. Certain bacteriostatic effects have been demonstrated, but this is attributed to the addition of glucose oxidase (the same enzyme responsible for most antibacterial action in honey) by the honey bee when it mixes regurgitated honey or nectar with the pollen. Therefore, this activity varies between pollen pellets and is much higher in beebread. A very slight antibacterial effect can also be detected in pollen collected by hand. There is some evidence that ingested pollen can protect animals as well as humans against the adverse effects of x-ray radiation treatments."

With reference to medical uses, he says: "In order to desensitize allergic patients, pollen is usually collected directly from the plants, to allow proper identification and purity. A pollen extract is then injected subcutaneously. Desensitization through ingestion of pollen is claimed, but has not received any scientific confirmation. For treatment of various prostate problems, pollen is usually prescribed in its dry pellet form as collected by the bees. Pollen from different countries or regions seems to work equally well. However, pollen has not been officially recognized as a medicinal drug. Since the consumption of pollen appears to improve the general condition and food conversion rate in animals as well as people, its support in accompanying other cures should be solicited more frequently. There may be other medicinal uses in traditional medicine which, however, have not been published in readily accessible journals."

With reference to pollen use as a food, Dr. Krell says: "The major use of pollen today is as a food or, more correctly, as a food supplement. As stated earlier

Continued on Page 38

Lima Bean Pollination

Dewey Caron

Lima Beans Are Important In The East, Midwest and California...And Maybe Where You Live.

There is a serious nectar dearth period in July and August in many states when bee colonies use resources stored earlier or rely on cultivated crops. Soybeans can provide a crop for beekeepers under optimum conditions and alfalfa can yield nectar when it's not cut before bloom. Buckwheat, a good nectar yielder, has been steadily decreasing in acreage and sunflowers may involve a pesticide risk. For some beekeepers on the Delmarva Peninsula, in the mid-west and on the West Coast, lima bean flowers are a possible surplus honey nectar source available at that time of year.

Lima beans bloom during the summer dearth period. Bloom date depends on planting date but fields usually start flowering in mid or late July and bloom extends through August, into September. The Lima flower is cream colored. They have an asymmetrical flower with anther and stigma held in a twisted keel. When a bee lands on the keel, it opens the flower permitting the bee's proboscis to reach the nectar secreted at the base of the corolla. Flowers last a day. They open early in the morning and don't close until the end of the day.

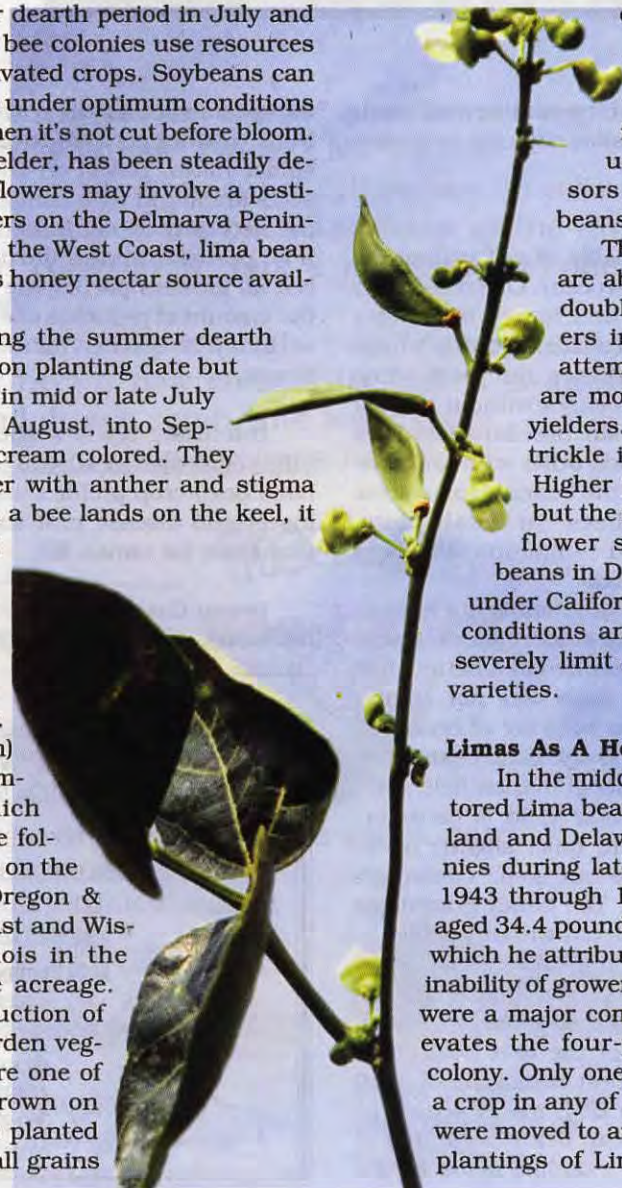
Nearly 12,000 ac (4,249 h) of Lima beans are grown commercially in Delaware, which has the largest Lima acreage followed by California's 6000 ac on the West Coast. Additionally, Oregon & Washington on the West Coast and Wisconsin, Minnesota, & Illinois in the Mid-West also have sizable acreage. There is little foreign production of Limas except as a house garden vegetable. In the east, Limas are one of several cash truck crops grown on small fields. Some fields are planted to winter wheat or other small grains

or another of the cash crops in the same fields to be harvested in September or October. Growers use the same planting/harvesting equipment they use for growing peas and processors use the same facility for the beans.

The average yields of Lima beans are about 2000 kg/h in Delaware but double that in California. Plant breeders in Delaware and California are attempting to develop varieties that are more drought resistant and better yielders. Some growers irrigate Lima's by trickle irrigation or overhead systems. Higher yields are feasible in Delaware but the new flowers developed at aborted flower sites seldom produce mature beans in Delaware, which they do regularly under California growing conditions. Drought conditions and high temperatures/humidity severely limit nectar production in bush-type varieties.

Limas As A Honey Crop

In the middle 1940's, George Abrams monitored Lima bean honey flow conditions in Maryland and Delaware. This included moving colonies during late July and August in the years 1943 through 1947. The lima honey flow averaged 34.4 pounds. The 1945 season was a failure which he attributed to excessive rain fall and the inability of growers to cultivate fields so that weeds were a major competitor. Elimination of 1945 elevates the four-year average to 46.7 pounds/colony. Only one of 14 apiaries failed to produce a crop in any of those years. In one season, bees were moved to an early planting and then to later plantings of Lima beans. Lima beans are still





Mobility is important colonies shown here on a house trailer frame take advantage of Lima bean plantings in smaller fields at varying dates.

considered a worthwhile honey crop and several eastern beekeepers move colonies to sites adjacent to grower fields.

Pollination of Lima Beans


The Lima bean flower is capable of self-pollination but cross-pollination can and does occur. One researcher found a 30% yield increase when honey bees were present in Lima fields. When beans are grown within cages, an insect pollinator increases the yield when compared to varieties adjacent to cages without bees or open pollination plots. Most bean breeders feel they can grow varieties adjacent to each other without experiencing cross-pollination. Of all the beans, Limas seem to be more attractive honey bees. In small plots, bumblebees, carpenter bees and numerous wild bees actively forage for pollen and nectar.

The exact benefit from bee pollination is not known. Studies conducted with a graduate student in Maryland, comparing caged to open plots, resulted in a better yield in cages with bees but the increase was not significantly greater. We concluded that bees are of benefit to Lima beans but they are not necessary. Lima bean growers often provide apiary sites adjacent to their field since the benefit to honey bees in nectar yield is considerable. Two or more supers of light, mild, slightly bean-tasting honey is usually reliable but some customers might object to the strong flavor. The honey granulates very rapidly and it must be extracted without delay.

IPM in Limas

One of the greatest challenges for beekeepers to secure Lima bean honey has been the loss of bees to pesticides. Lima bean was one of the first field crops included in extensive Integrated Pest Management (IPM) studies beginning in 1973. With IPM, insect scouts go into Maryland/Delaware Lima bean fields beginning in early August and systematically examine fields for in-

sect pests such as the corn earworm, lygus bugs, stink-bugs, leafhoppers, Mexican bean beetles, and finally spider mites. Based on what pests and how many insects are found with sampling, a decision is made as to the necessity for an insecticide spray application. With IPM, pesticide sprays during bloom have been reduced. Not all growers participate in IPM programs but overall the amount of pesticide use has decreased in Lima beans so today it is safer for both beekeepers and bees in Limas.

Interested readers should check out the web site <http://ipmwww.ncsu.edu/opmppiap/suberp.htm> for a Lima bean crop profile that includes current IPM-based insect and disease pest control as well as cultural information for Limas. 

Dewey Caron is Extension Entomologist and Professor of Entomology at the University Of Delaware. He loves lima beans.

PACIFIC NORTHWEST BRED QUEENS
WILD CAUCASIAN/USDA RUSSIAN SURVIVOR STOCK

SELECTED FOR HYGIENIC BEHAVIOR AND MITE RESISTANCE WORK AT COOLER TEMPERATURES

• ISOLATED MATING YARDS FOR GENETIC PURITY

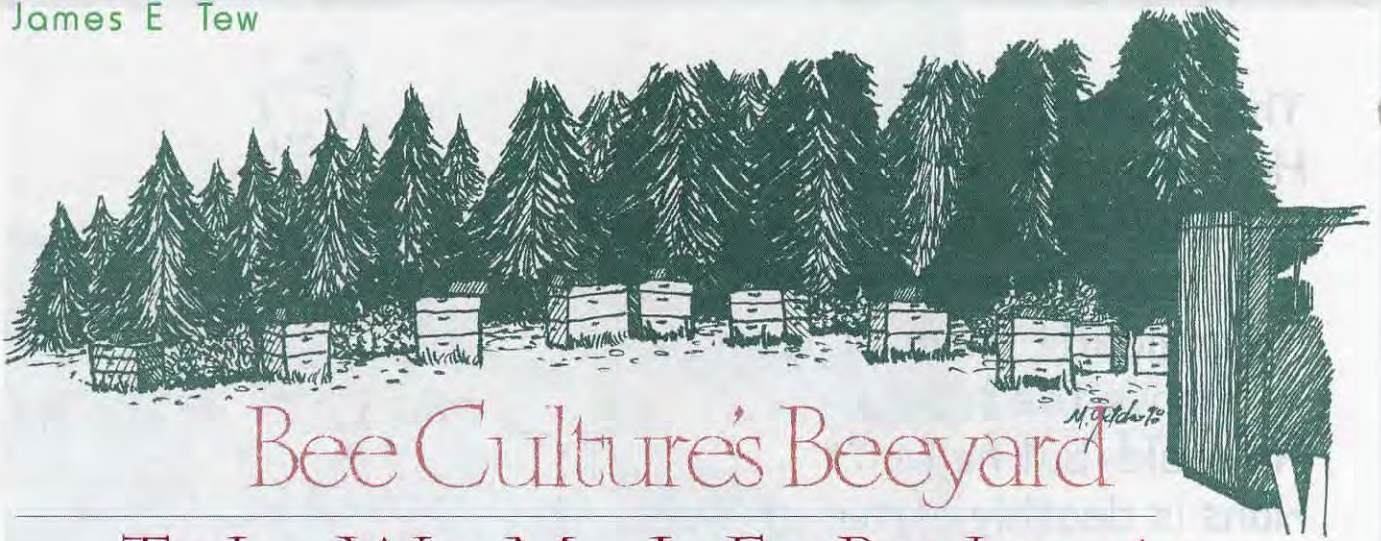
• DRONE CONTROL

2001 Summer/Fall Queens
 \$12.00 per marked queen

Contact us for details on S/H; Quantity pricing; and Availability



OLYMPIC WILDERNESS APIARY
 46492 Hwy. 112, Port Angeles, WA 98363
 360.928.3125
 email: harbees@olyopen.com



Bee Culture's Beeyard

Today Was Made For Beekeeping

I Enjoyed It While It Lasted

Today is a good day in the beeyard. It's late Sunday morning, blue skies, gentle breeze, distant birds chirping and everywhere the sounds of buzzing bees. I realize it's July to you but it is late May to me. There is still the entire summer yet to come for my bees and me.

I was struck by the realization that I have been doing this *Bee Culture* Yard project for about three years. As I looked across the yard and listened to the bees flying, I remembered the first day I considered this location as a possibility. I remembered asking for permission to put bees here and I remember the explanation that was required. Now, that's all history. The yard has been here for several years - looking as though it has been here for 100 years. For a moment, I feel a sense of accomplishment. Someone will drive by this spot in future years and

tell a kid, "I remember when an old guy had bee colonies right there." and point to a new sub-division or a Wal-Mart or something.

Plans are made. Plans are changed.

As many of you may recall from my early days of this project, I had planned various aspects for the yard. I have accomplished a lot, but a lot still needs to be done. Ironically, one of the basic requirements of the location - accessibility - has never been a problem, but now it is. There is presently 4-5 inches of standing water in my lane. I have had to park in a different place and make a short hike into the yard. I briefly thought of having soil or limestone hauled in, but it's not worth it. It'll be dry in a few days and later in the summer, I will be wishing for the moisture. Right now, it's really wet.

You may recall that in previous articles, I described a garden bench

I had put in the yard. I now report to you that I have enjoyed sitting upon the bench thinking about beekeeping and whatever else came to mind. Though I like the bench, I must move it each time I mow and it tends to sink into the soft ground (my weight I suppose). I will need to address these problems. But I was not expecting this....I have had to fight off mosquito attacks while sitting on the bench. Oddly, I thought bees would be the problem. I never considered other biting insects. So my two complaints for the month to you - an excessively wet driveway and mosquitoes on my sinking garden bench.

Updates.

I have repeatedly told you that I am not trying to perform science in this yard, but I frequently look at various pieces of equipment, bee strains, and other such mundane

A slatted rack sitting on a common bottomboard.



A strong colony with a slatted rack in place.



bee topics. A few updates describing such observations follow.

The Slatted Rack Colony

All those months ago, I put a slatted rack on one of the hives. I cannot draw any conclusions from one only observation, but that colony is now blistering strong. A mouse nest was built under the rack during the winter, but the strong colony cleaned up all signs of the nest. Though several of the colonies now need supering, I had to super that particular colony several weeks ago. I don't have many of these contraptions, but I may try a few more. Have any of you tried them? What have been your observations?

The Warm-Way Entrance Colony.

I have one colony that has the entrance on the lower side of the colony rather than the lower front. I have reported to you that it fared very poorly during the winter and required feeding. I expected it to die, but it hung on coming into spring with a cluster about the size of a softball. It had multiple problems, but it is really pushing to come back. It's filled with brood and right in the middle of spring, this colony would really profit from some sugar feeding. Presently, it's brood strong and honey poor. This colony could still benefit from some beekeeper assistance. Is the side entrance causing the problems? I doubt it, but one never knows.

The Packages Arrived.

The packages arrived in early May. You may recall that I ordered

One of 10 frames of honey from the hive having a slatted rack in place.



two 3-pound packages from Georgia. They arrived on Friday and I could not do anything with them until Monday. I kept them quiet and cool and fed the packages sugar syrup occasionally. I released them on Monday morning. Yes, I know, I should have waited until the afternoon, but I wanted to get them out since they had been confined so long.

I confess that I had many resources that a brand new beekeeper would not have. I shamelessly used them all. I installed them on drawn comb and I had some honey still in the comb that I gave the packages. Finally, as a real booster, I gave each package, after being released, one average frame of brood. All these extras really pumped the package colonies up.

The package about to be released.



My packages awaiting release.



A nice frame of brood from one of these packages, about 3 and a half weeks later.





Pollen trap entrance. The wire I am holding opens or closes the pollen-collecting grid.

In fact, one of the packages already needed another deep hive body today. The other package will need one next week if the flow holds out. Overall, these packages hit the ground running and have really made nice colonies already.

The Pollen Trap Colony

I installed a pollen trap on a colony of medium strength. I will use the bit of pollen I collect to build up colonies next winter and spring – or even this season if needed. Foraging bees adapted to the entrance quickly and in only fifteen minutes, a small amount of pollen was already in the drawer.

Mixing Plastic Equipment with Wooden Equipment.

For management reasons, I have mixed plastic equipment with

wooden equipment on the hives. It looks junky, but “the bees won’t mind.” I have actually been dreading doing this. I have always wanted my yard to be scenic and organized, but try as I might; it always seems to need work. What do you think of figure 9?

On Your Behalf.

I just spent the previous two hours working colonies on your behalf (Seriously). I feel overwhelmed when I try to put my observations in writing for you. Nothing I do in the yard is very complicated, but there are so many little (and big) things to consider - many of which can’t be readily put to pen. I have composed the following eclectic list of things/events/procedures that make for difficult writing and nearly impossible photography. You will probably

need to experience these events rather than simply read about them to get the full effects.


1. *The tenacity and stickiness of propolis.* It gets all over everything. When mixed with honey and beeswax pieces, you are a mess. True, alcohol takes it off, but I have found that alcohol simply dilutes propolis so I have something akin to a wash coat of shellac on my hands. Propolis accumulation leads to #2.
2. *My camera.* I hope you appreciate the photos I include in these articles because my camera pays a price for them. That same propolis, honey and wax that gets all over me gets all over the back and shutter release button of my camera. In general, bees don’t seem to care for cameras.
3. *Perspiration* (Sweat to most of us). Add that to the list of annoyances. It runs down my face and drops onto my glasses. Obviously, there’s no way to get to my spectacles behind my veil, so I try to find clear spots. I end up being a contortionist trying to work bees and make photos with sweat-covered glasses. Upon completion of a hive-working episode, I am sweaty, red-faced, wet, and smell like smoke. Mmmmh, mmmh. Not a good time to try to make new friends.
4. *The warm, pleasant surprise of a full super or a thriving colony.* Sure, I can write how good it feels - how rewarding it is, but until you feel it for yourself, it’s nearly impossible to describe - and such a feeling is impossible to photograph.
5. *The general stickiness of beekeeping.* The inner cover is stuck down; the outer cover is stuck down. Burr comb makes it difficult to get the tenth frame back in the hive. Occasionally top bars pull off – and pieces of wax cut from combs and dropped to the ground end up stuck to the bottom of my boot. Combine this one with #3 above for an outstanding photo.
6. *Garbage cans.* I’ve never photographed my garbage can and my burn-barrel for you, but they are important to me. All good bee yards should have them. Beekeeping is inherently junky. Be



After only a few minutes of operation there is a small amount of pollen in the trap.



For management reasons I've mixed plastic and wooden equipment.

the other bees inside the hive. We get calls from people who find swarms and find that this carrier works well for transporting swarms in our truck. We close the top of the box and most of the bees stay inside with the queen or ride outside on the box. We keep the boxes on hand as part of our bee equipment." (Joan is at: <http://www.honeyhillfarm.com>). 

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

prepared to discard things. If you have to think about keeping it, throw it away. The longer I stay in beekeeping the more disinterested I become in repairing things – especially inner covers that pull all to pieces when I pry them from the hive.

7. *Odors and sounds.* There's no way to adequately write about the odors and sounds of beekeeping. The pleasant smell of new honey. The smell of propolis. The sound of an angry bee right in your face. How can I possibly describe the smell in the car after tossing a smoker in the back floorboard? Combine with numbers 3 & 5 above.
8. *Bad smells* – the stink of a dead colony. The ominous odor of American foulbrood. The mess of hive dysentery. I can describe and I can photograph, but you need to experience these smells to understand them.
9. *The pleasure of working a strong colony during a nectar flow.* The bees are gentle, the hive smells great and the beekeeper feels good.
10. *The dead weight of honey.* It is heavy stuff and there is nothing you or I can do about it other than buy gadgets. Until you have picked up full honey supers, you have not experienced all of beekeeping.

You have told me....

Joan, from Ohio, wrote to tell me how she and her husband move swarms around. I have never heard of the procedure. She said, "We have

found an unusual and quite successful way to collect swarms. Most veterinarians sell small cat size cardboard pet carriers for about \$5.00. These carriers have round holes for ventilation. My husband puts a frame inside the carrier and shakes the swarm into the box. He puts the box on the ground and the bees stay in it. In fact, they really like it and fly in and out of the holes. After they are settled and we know the queen is inside, my husband carries the box to a hive that he has prepared, gently removes the frame with the queen and puts it inside the hive body. The rest of the bees in the carrier soon join

BETTERBEE

BEEKEEPERS SERVING BEEKEEPERS

22 YEARS

OF BEEKEEPING INNOVATION

GET YOUR FREE 2001 CATALOG

1-800-632-3379

MON-FRI: 8:30-5:00 & SAT: 8:00-12:00

BEES, HIVES, WAX, TOOLS
CANDLES, MOLDS, BOOKS
CONTAINERS, HONEY, MORE

EVERYTHING FOR BEEKEEPING

SATISFACTION
GUARANTEED

8 MEADER ROAD, GREENWICH, NY 12834

We're Smoking!

with the best smokers you can buy

SMOKE STACK

Only \$25.95



HOBBYIST SMOKER

Only \$19.50



PRO SMOKER

Only \$29.95



1-800-233-7929
FAX 1-336-921-2681
www.beeequipment.com



**BRUSHY MOUNTAIN
BEE FARM, Inc.**

610 Bethany Church Rd.
Moravian Falls, NC 28654

(Shipping Charges Not Included!)

SUMMER SPLITS FOR OVERWINTERED NUCS

Roy Hendrickson

Begin overwintering prep now by making strong, healthy splits that will be boomers next April. Here's how.

Off all the challenges facing beekeepers today, nothing even comes close to the destructiveness of the *Varroa* mite. Whatever the correct name, *Varroa* has become the dominant factor in beekeeping. Manage this creature or perish!

For years I've marveled at the resourcefulness of commercial beekeepers, especially the migratory operators. Some move to pollinate, some for honey, or both. And some move just to survive. They move from northern honey producing locations to southern wintering areas. This to avoid the ravages of the northern Winters, and to increase the length of the Spring building period. This also allows them time to recover and re-

build from the ravages of *Varroa*. The cost of moving is high but the alternative, to stay put is even more expensive. For the smaller operator whether sideliners or hobbyist, moving is probably out of the question and not economically feasible. What these beekeepers need is a management plan which allows them to achieve results similar to the migratory operator without the move.

About fifteen years ago I started

Two singles, ready to wrap

to experiment at overwintering very small colonies. My original intent was to rear my own queens during the summer and overwinter them for use the following Spring. I didn't want brood from the units, just the overwintered queens. I tried a variety of colony configurations and insulating techniques with mixed results. In years with fairly mild Winters I had modest success. Tougher winters ended in disaster. The basic shortcoming was that small colonies were just that - small colonies. They didn't have enough mass to survive the colder Winters reliably.

I probably would have given the project up as a lost cause had tracheal mites not entered the picture. By the Spring of 1990, tracheal mites were causing real havoc. Even



with menthol treatments, winter loss rates skyrocketed. Colonies that did overwinter were on average weaker than normal and took longer to buildup. Spring management consisted of hoping for the best or re-starting dead colonies with packages. Not the best option there due to our short Spring buildup period. All of a sudden overwintering Summer splits for Spring replacements took on new meaning. These new Summer splits were started earlier and stronger and allowed to build into medium sized colonies prior to Winter. Appropriate treatments were applied in time to be effective and improved Winter protection was developed. The whole process kind of evolved over a three or four year period. By the time *Varroa* devastation reared its ugly head in 1995, the process was down pat and was easily adapted to accommodate this new pest.

The following is a brief description of the system currently in use. A future article will deal with Spring management of the overwintered splits. The time frames and colony strengths will need to be adjusted to different latitudes and to local conditions. But, I feel the basic principles will work in any central or northern location.

SUMMER / OVERWINTERED SPLITS

I start making up the Summer splits in mid-July with two full-depth frames of brood and enough bees to cover. Four or five frame nuc boxes are ideal for this size split. They are compact, easy to move and work with, and provide adequate room for early brood nest expansion. In cases later where the caged queen or queen cell isn't accepted, it's a simple matter to shake the bees off any remaining brood, distribute it to the good nucs and restart the dud. Also, should a nectar dearth occur during this period, the weak splits can defend themselves much better in the smaller brood box.

Once the queens are accepted and laying well one strip of Apistan or Check Mite+ is added to control *Varroa* (do not do this until you are sure the queens are well on their way). No attempt is made to determine existing mite levels. These small colonies *cannot* tolerate any

Continued on page 28



With insulated covers installed and ready to wrap...



...the felt wrap is applied, just like a Christmas package.

And the finished package is neat as a pin.



INSULATED



Dado cut for the entrance and ventilation

The key to reliable overwintering is the insulated top cover. This cover is the result of many years of experimenting with top insulation, and was developed to simplify Winter preparations. Otherwise it's necessary to assemble the various parts as the colonies are wrapped. In the home yard this is no problem. But, trying to keep everything on the truck to the out yards is another matter.

The shell is either an old hive body or super cut down to 3-1/8" high and incorporating the hand holds. The actual cover (fastened to the bottom of the shell) is 3/4" plywood with an entrance/ventilation opening cut into the front edge. This dado cut is approximately 2-3/4" wide and 6" deep. It provides the main Winter entrance and allows for all necessary ventilation. The shell is filled with three inches of Dow® high density Styrofoam with an 'R' value of 5 per inch. The top of the shell is covered with 1/4" Luann (similar to panelling) with a 3/4" x 1/4" rim. This rim allows the cover to be used on individual colonies. In this case, the inner cover is stored above the insulated cover with the outer cover in its normal position. The 1/4" rim ensures a tight

High density styrofoam. One, 1 inch and one, half inch piece work well.



A shell filled with the styrofoam sheets.



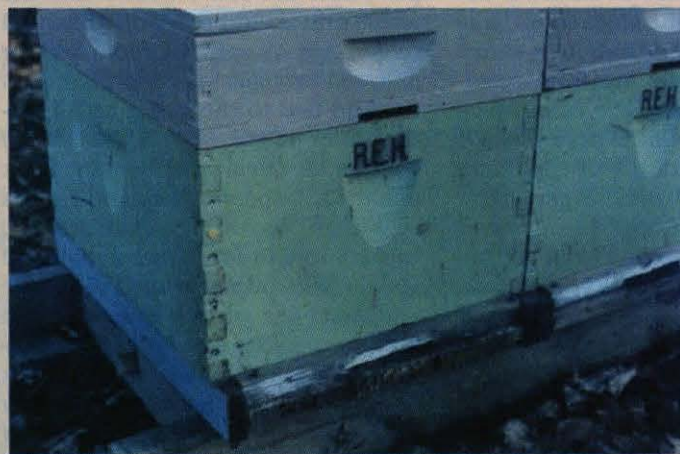
COVERS

even fit if the inner cover is warped.

Honey bees don't heat the inside of the hive, only the interior of the cluster. The principle behind top insulation is to trap the heat but not the moisture given off by the cluster, the same idea behind the recently introduced Styrofoam hives. The end result is that the cluster remains loose. The bees can move upward or laterally with ease, cold starvation is eliminated. A simple illustration... Select a colony, either single or double hive body with the top of the cluster clearly visible. The temperature should be 20° or less. Install the insulated cover or something with a similar 'R' value. Return a half-hour later and note the change in cluster size. I've unwrapped single hive body packs at twenty degrees and all but the outside frames are covered with bees. After less than five minutes exposure the cluster has returned to almost normal size.

When compared to Styrofoam hives, the insulated cover has the distinct advantage of price and durability. The cost to build one ranges between six and seven dollars, depending on local material costs. Anyone with basic carpentry skills can build a cover, and they should last a beekeeping career.

A partial and a completed cover - a quarter inch rim for inner cover storage.



The insulated cover in place showing the entrance.

The insulated cover in place on a double hive body colony with the winter wrap completed.






The finished product, ready for any winter weather.

Varroa damage and still overwinter successfully. Hence, the strip is added matter of fact and removed at the appropriate date later. Terramycin can also be added if desired. No treatment is given for tracheal mites other than to assure the queens or cells are from resistant stock. Initially the nucs were supplied with a frame of honey which should suffice until the nuc is ready to be transferred into larger quarters. No external feed is supplied both to prevent robbing from getting started and to lessen the workload. Should the nucs run short of food additional frames of honey are supplied. By early August any new splits are started with three frames of brood (one more than in July) and bees to cover plus enough additional bees to establish a field force. Otherwise these later splits are managed as described above.

All of the nucs have been transferred into ten frame single hive bodies and moved to their Winter locations by late August. The equivalents of two or three frames of honey are added during the transfer. In most years, these growing colonies are able to gather the necessary winter stores from the fall goldenrod flow. Any colonies not lead heavy by mid October are fed a heavy sugar syrup until they're up to weight. Once the winter cluster starts to form in late October, the colonies should cover five to six frames and weigh from 65 to 70 pounds.

Just prior to the onset of cold weather, usually by late November

the colonies are prepared for winter. Both the outer and inner covers are removed, and an insulated top cover installed. The two colonies per pallet are slid together and the whole unit is wrapped with 15 pound roofers felt. A weather roof of either plywood or waferboard is placed on top and tied to the pallet with plastic bailer twine or weighed down with rocks. Once complete, the pack is almost impervious to the ranges of Winter. Warm, dry, and healthy, with abundant food the colonies will Winter with almost no loss. Come mid April the wrap is removed and Summer covers installed. The colonies will vary in size from four to as much as eight frames of brood. A few will need feed, a couple of frames of honey or, if not available syrup. Otherwise they are ready for whatever use is desired.

By retaining heat given off by the cluster, does the insulation cause increased Spring brood rearing? Absolutely. Which is why the colony needs to be lead heavy with Winter stores, with the cluster covering no more than five to six frames going into Winter. Come late winter and early Spring, the bees will turn those stores into brood. When the colonies are unwrapped in mid April, they're in excellent condition. Probably quite similar to the singles being hauled north by the migratory operators mentioned earlier. 

Roy Hendrickson keeps his bees and nucs safe and warm in Northeast Ohio.

SIMPSON'S BEE SUPPLY

15642 Tiger Valley Road • Danville, OH 43014

740.599.7914

PIERCO™ DISTRIBUTOR

csimpson@knox.net • Call for catalog

ITALIAN & CAUCASIAN QUEENS

HOMAN-MCMASTERS APIARIES

503 CR 520, Shannon, MS 38868

662.767.3880 or 662.767.8923

FAX 662.767.3803

Queens

1-49

50 - up

\$7.50

\$6.50

Marking and clipping - \$1.00 each.

ITALIAN QUEENS

Frank & Sheri Pendell

P.O. Box 40

Stonyford, CA 95979

(530) 963-3062

All Queens Are Marked
PENDELL APIARIES

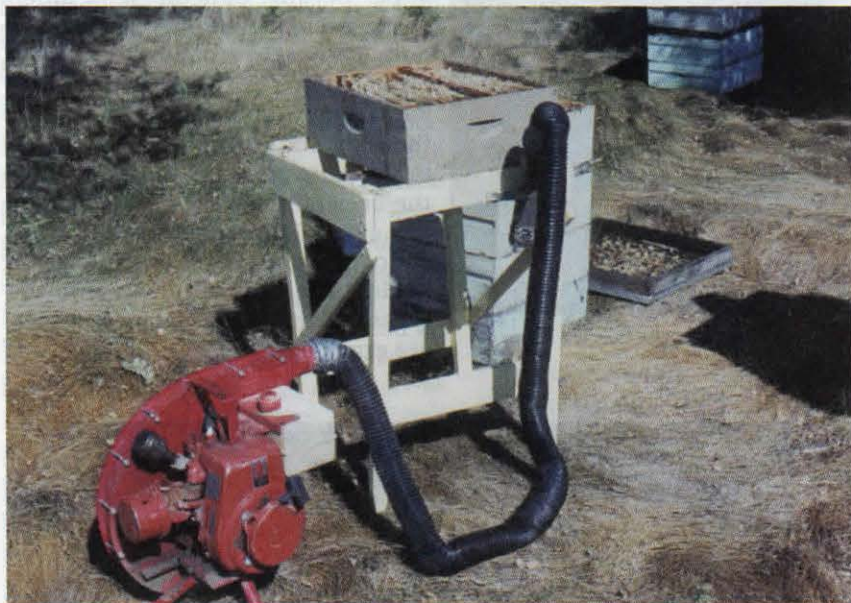
R.M. FARMS



Blowin' In The Wind

Tips & Tricks For Using A Bee Blower

Bob Kornely



For 10 years, beekeeping was a hobby for me, so when I removed honey, the bees were shaken and brushed off the combs. But by 1972 I had increased to 40 colonies, and I decided to buy a bee blower. It came at the right time, because that year I had one of my best crops – 200 lbs. per colony. Here are some thoughts on how I use my bee blower.

My blower shows its age, but still works like a charm. Have a long, flexible hose, a solid stand and a few extra supers.

This is what the bee catalogues call a collapsible chute. It is the stand that holds the super of honey that has been removed. Mine is homemade, 32 inches tall, high enough so I don't not have to bend my back when blowing out the bees. It is sturdy and has been in use for at least a dozen years. The diagonal brace legs, are very important for strength and stability. The stand does not have a chute like those you'll see in the catalogues. I put one on my first stand, but if there is



a good honey flow, the combs will be thick with honey, the chute becomes sticky and the bees get stuck to the chute. It works much better to blow the bees directly into the grass below. The stand is placed close to the

front of the hive, but not in a position to block incoming bees from their entrance. Hundreds of bees trying to get into the hive does not help to keep the bees calm.

Continued on Next Page



You can place a full super on the stand, and then begin to blow the bees out. However, I have a different method that has worked very well for me. I first place an empty super on the stand. Then I remove half the combs from the super on the hive into this box as the photo shows. Why? For two reasons. First, it is much easier and faster to blow the bees off. Second, because as I got older, lifting and carrying a 60-pound super became difficult. It is much easier for me to handle lighter units hour after hour. Probably the biggest disadvantage to this system is that you need to bring empty supers to the beeyard, but for me, the advantages are worth the effort. To blow the bees off the combs I start at the top side of the super as it sits on the colony and keep blowing from all angles. The bees fall down into the grass in front of the colony and soon are crawling back into the hive they just left.

This step is more important than blowing from the top. This is blowing from the *bottom* of the combs up. Here, the super is tipped forward. That is why the stand must have diagonal legs, so it will not fall forward at this point. With one hand, the super is held steady, and with the other hand I hold the nozzle and begin blowing the bees, moving the nozzle steadily to blow both sides of each comb and again from all angles. When you blow from the top, you'll notice that the bees can stubbornly cling to the cells. They seem to lose this ability when they are being blown out from the bottom of the combs. The bees also cling to the bottom bar of the comb when being blown from the top. Actually, more bees are removed from the combs from the bottom than from the top. These bees are blown into the air, and quickly fly back into their hive. When I lower the super back onto



the stand, I give another sweep from the top. A good estimation of how long it takes to blow the bees from a super would be about 30 seconds.

The advantages of using a bee blower are that it is much faster than getting the bees off the comb by shaking and brushing and also that very few bees are left in the supers. Another advantage is that there is no smell. A disadvantage is the noise.

This month I'll be changing the oil in my bee blower and gassing it up. All the while getting more and more excited about the hot sweaty days to come. For it will be the time of the year to take off the new crop of honey. **BC**

Bob Kornely has been keeping bees for over 40 years in South Dakota and Nebraska.

Murphy's Law

Ann Harman

Who else can you blame?

All beekeepers are surely convinced that Murphy's Law is firmly in control of everything we do with bees and honey. Good thing, too. Who else is there to blame for getting a truck full of hives stuck in the mud at 2 AM? Who else forgot to close the gate on the extractor?

Are all the queen excluders put on? Are you sure? Whoops—just how did this hive get overlooked? Now the queen has invaded a perfectly good honey super. You set the two broody frames aside, but your assistant (not a beekeeper), thinking you had overlooked them has uncapped and extracted them. Just enough brood to give that telltale cloudiness to the batch of honey. The flavor is fine but the appearance is not your usual standard. Eat it yourself? Feed it back to the bees? Perhaps now is the time you try making cremed honey.

Oh-oh. Where did the bees go for this honey? You were expecting your usual light amber summer honey—the one that sells really well at the farmer's market. This crop of honey tastes great, rich and full-bodied, but definitely darker than usual. Don't give up on it. You don't really need to know what it is. Have a small label made that indicates that this honey is much more special than your usual honey. "Rich summer meadow honey, discovered by my honey bees." Well, you can think of some other suitable phrase. Give taste samples if possible. If not, bottle some in smaller jars so the customer can sample. Be sure to emphasize that the quantity is limited since this source is not an annual event. Oh yes, charge more for it.

So two-pound size jars sell very

well in your area and tomorrow is the town's annual summer festival. Today is honey bottling day. Hmmm. Lots of one-pound jars and two-pound jars. Lots of one-pound jar lids. But the bag you thought had two-pound lids has more one-pounders. Now what? Here's the makings of a "special." Buy a one-pound jar for the usual price and get the second jar at a reduced price. (You will have to fill in the prices here.) If you happen to have two different colors of honey, so much the better. Offer a "pair" of flavors – or a "family variety pack," "one for your tea and one for your toast."

"Spills, lids, machines, time – all can work against you."

While you're at it, better check the new batch of labels from the new printer in town. Did he misspell your last name? He did? And how many labels did you have printed? Perhaps enough for you to change the spelling of your last name?

Aren't gadgets great! You've got a nice one to tell you when your bottling tank is full. It has a neat little battery-operated bell, loud enough to be heard over the music on the radio. So why is the tank overflowing and spilling honey on the floor?

Oh no. Batteries do go dead. The only way out of this mess is to clean up the bell, buy new batteries, mop the floor and feed the honey back to the bees. The honey may not be disease-free? Let's hope you can bury it deep in the compost pile.

Where are all these moths coming from? They look like – they are! – wax moths. Why are you smashing 15 wax moths every night in your honey house? The honey supers are clean and stored properly. Nothing is hidden in some forgotten corner. But somewhere, somehow wax moths are being produced. Time for a detailed search. No, they couldn't be from the extractor. Oh yes they could. Remember, back last summer you were emptying the extractor but got interrupted. Three nice, but old shallow frames were left inside. Now the warm days of late spring have arrived along with hatching time for wax moth. Well, that comb needed replacement anyway. And then try to sell some fish bait to make you feel better.

Bears are black. But the critters who have suddenly exploded into a frenzy in the bee yard are brown. With a white face. And they are saying mooooo in a very agitated way. The nearest Herefords live about 1/3 mile away by road. By pasture distance, coming the back way, it only adds up to three pastures. Well, phone the farmer, shout at the cows and start calculating – 5 stomped-on hives equals how many beef steaks? Diplomatic negotiations are called for here.

Fifty pounds of clean wax sounds like a nice gift. Yes, the wax came from a beekeeper who retired from his hobby. And yes, the wax is clean. But the color of it can only be

"There really should be a Guinness Book of Records for beekeeping mishaps."

described as—indescribable. Sort of darkish, dirtyish, tannish, brownish. Not pretty. Actually this wax can be salvaged into candles and ornaments. First try bleaching with hydrogen peroxide. The attempt here is to try to make the wax as light as possible. Nothing is going to work to regain a beautiful canary yellow. But with light wax, deep colors can be added to make very salable candles. The Christmas colors are a bright but deep red and a rich green. Halloween requires black and orange. Well, the black will work fine. Orange? Maybe. You will have to try. Thanksgiving could be a rich brown and orange, again. Ornaments can be made and painted. It really does not matter about the back of an ornament. If it does not look too attractive, paint it one color that complements the decoration on the front side. Or you can just forget about bleaching entirely and make fire starters. Pine cones dipped in wax work very well. You can mix straw or saw dust with melted wax and use egg cartons for molds. When solid, separate the 12 sections. Fire starters sell very well when the chilly nights set in or at holiday times. Wax keeps so you do not have to use all the wax this year.

Here's just six frames from the extractor that need a bit of robbing to clean them up. The easiest thing to do is prop them up against this tree trunk and let the bees get to work. A few bees had time to find the wet comb before nightfall but during the night some critter had a feast. Thank goodness for plastic foundation – it's inedible. Wax and honey evidently made a good dinner or midnight snack for some critter. A look around – and down and up – there! on a tree branch above the frames is a possum, looking very satisfied and sleeping off his meal of the night before. Start looking up recipes for possum.

Veils are supposed to keep bees off your face and neck, right? They do a good job until your helper accidentally turns the bee blower onto you, plastering the veil, complete with at least one unhappy bee, against your face. What made you think propolis is a good substitute for hive staples, duct tape or straps? Just who did leave the door open to the kitchen/garage/honey house? Has anyone yet come up with a good solution to immediate removal of a bazillion bees efficiently robbing what you just planned to extract? How have you been able to convince a large "beard" of bees that they really want to go back into the hive on a hot, sticky night so you can move the hive for pollination?

Just how does Murphy know that a series of events is more fun than a single event? For example, how about the beekeeper vigorously mopping up a honey spill and managing to break the honey house window with the mop handle.

There really should be a Guinness Book of Records for beekeeping. I cannot think of another occupation that produces such

strange happenings. The categories could be endless: the number of hives driven over with your own truck, or the number of smokers driven over, the quantity of honey spilled on the honey house/kitchen/garage floor. Actually someone may already have an entry in this one. Can anyone out there beat the commercial beekeeper who managed to deposit 1000 gallons – at one time – on his honey house floor?

It would seem that Murphy's motto is "keep up the good work – the beekeepers out there need all the help they can get." **BC**

Ann Harman is a sideline beekeeper and international marketing consultant.

HARRELL & SONS, INC.

Three Banded Italian Package
Bees and Queens

P.O. Box 215 Tuskeena St.

Hayneville, AL 36040

PH. (334) 548-2313 (334) 548-2262



Ross Rounds, Inc.

Round comb section equipment
and Sundance pollen traps.

Contact your dealer for supplies.

PO Box 582, Guilderland, NY 12084
V 518-370-4989 • F 518-381-6370
www.rossrounds.com

HONEY PACKAGING



Honey Bear Bottles

• Lightweight • Shatter Resistant • Microwavable & Freezable •

Honey Bundle™

6-Pack Carriers

• Convenient • Attractive • Sell 6 At Once •

Hi-Flo Spout Caps™

• High Gloss Finish • Large Inside Opening •
• Many Stock Colors • Liners Installed •



P.O. Box 30070 • Stockton, CA 95213 • USA

1-800-BUY-BLUE • www.bluemagic.com

Principles of Beekeeping Backwards

Charles Martin Simon

10 Principles truly from another side of beekeeping

I have established mystic contact with the spiritual core of apiculture, and now anything is possible. Some of you old timers might resonate with this statement, but most of you, I'm sure, will not have a clue. Many will be irritated by what you perceive to be my arrogance; but, you have it backwards. It is not arrogance; it is humility. I will attempt to enlighten but without — a technique gleaned from the gurus — giving up any trade secrets. That was a self-deprecating joke. I'm no guru. I view their antics with cynicism. What I am is a beekeeper with forty years experience and the ability to tell you what you're doing wrong.

Our apicultural forefathers, those great men who defined the principles of modern beekeeping, Langstroth, Dadants, Root — why were they so extravagantly successful? The answer is simple: because they didn't know what they were doing. They made it up, as it were, as they went along. That is the creative principle, and that is the way it works. Once the standards have been set and carved in stone, the pictures and diagrams and procedures etched into the books, we have then models to live up to, and we can't do it. Everything that comes after primary is secondary, or less. It will never be the same. For us to succeed, we have to become primary. We have to view beekeeping with entirely new eyes, just as our great pioneers did.

The more I studied beekeeping, the less I knew, until, finally, I knew nothing. But, even though I knew nothing, I still had plenty to unlearn. For we can never, and I do mean *never*, reiterate the ideals of the books, of history. How did Langstroth manage all his colonies without power tools? Especially when he was totally disabled for months and months. How did he do it? Simple again. He was crazy. Crazy people can do phenomenal things. The other side of insanity is genius.

I realized early on that if I followed the rules as written, I would fail. And how could anyone who knows better choose to fail? But it did take me a long time to figure that out. I started out just like everybody else, trying my best to go by the book.

It took me 20 years to get up the courage to sell my extractor, after it had taken me ten years to save up enough to buy it in the first place — along with a truck with a shack on the back to serve as a portable extracting room. I was so stupid back then. I thought it was about honey. I'd read all the books, especially Ormand's, especially the part where he says, "Honey is money." I bought it hook, line, and sinker.

But don't get me wrong. I love Ormand. He's my friend. Acknowledged grand master of the game, third generation beekeeper, author of two great books on the

subject, holder of the world's record in the GUINNESS BOOK OF RECORDS for the most honey produced by a single hive in a single season with a single queen, 404 pounds, a record that held from 1957 – 1963, when it was broken only with the use of multiple queens. Ormand's true, single-queen record will most likely never be even seriously challenged. But he doesn't keep bees anymore. The unthinkable happened. It was not that he got too old. He is very old, but he still works in carpentry. What happened was the mites wiped him out.

Ormand played by the rules. Bought the miticide and followed the directions. I bought the stuff too. But when I was handling it still sealed in foil, I could taste it in my gums, and it tasted toxic, so I didn't use it. So my bees died. But Ormand's bees died too. Besides, we were hearing reports from all around the nation that it was not working. But "they" were insisting that we use it anyway, the implication being if we didn't use it, we were part of the problem. But if we did use it, our bees still died. Year after year, I didn't use it. Year after year, I'd start new swarms in the spring, only to have them die off in the fall and early winter. I didn't quit only because I couldn't. Then we heard the miticide was outlawed in Scandinavia.

Ormand listens to an inner voice. I respond to an inner impulse. It's not that I am against detail work. After all, I've written and currently maintain ten books in print. I've rewritten them all countless times — am still rewriting — do all the work, editing, designing, printing, cutting, binding by hand. But something rubbed me the wrong way about foundation from day one. My inner impulse very definitely didn't want me to use it. I learned how all right, used it for many years, even after I had unequivocally decided against it.

Then I invented my foundationless frames. I manufactured them by hand, with help from Ormand, because he appreciated the way they worked and wanted to be a part of it, and sold them all around the world for a few years, until the price of wood doubled, then tripled, and it ended up costing me more for the raw wood than I could sell the finished frames for. So I had to go out of business. But the point is, I paid the dues. I don't avoid work just to be avoiding it. By the same token, I don't do meaningless work just to be doing something. I'd rather do nothing than something meaningless.

The mass-productionization of bee culture is the single most damaging process in our world. The great pioneers of modern beekeeping created vast empires without knowing what they were doing. The motivating point was and always has been, how to get the most

Continued on Next Page

out for the least put in. Those great men had no idea what old fools they were, and how universally pernicious their principles would become.

Take the drone situation for example. They reasoned correctly that since it only took a few drones to fertilize the queens, this business of a colony supporting hundreds or even thousands of drones was wasteful. So great minds went to the drawing board and described a hexagonal cell base parameter based on worker-bee size, uniformly embossing foundation with this pattern, thereby rendering it more difficult for the colony to raise drones. A war developed between the colonies attempting to raise drones and the keepers attempting to subvert their natural inclination. The apotheosis of this process was reached with plastic worker brood foundation, making it impossible. But even then, the bees drew cross-comb and tried to raise their drones there. Human ingenuity and technology prevailed, and drone populations decreased, honey production increased, the practice was deemed brilliant, and worker foundation was simply another unquestioned standard of the industry.

The trouble is, *varroa* prefers drone brood. And when there's a dearth of drones, the dirty rotten parasite has no choice but to migrate into the worker cells. Drone brood trapping became *de rigueur* in Europe, but, apparently too labor intensive for the United States. Some intelligent manufacturers offer drone brood foundation but it hasn't caught on. The work ethic in this country is as follows: Do the minimum amount of work. What this means: just enough to keep from getting fired.

If I sound disgusted, it's because I am. When everything you learned is wrong, you either change or go down with the ship. I pray for the courage to change. Even though I am an old man, I understand the value of not being set in my ways.

Although I didn't like foundation from day one, it took me years to develop the fortitude to stop using it. And many more years after that before I was able to give up the pernicious addiction of extracting — years to give up the constant striving for "straight combs" that would lend themselves to the extracting process.

There are no straight lines in Nature, folks. Nature abhors symmetry. Sure, things look symmetrical, but they never are, not when you look close enough. Symmetry is a human interpretation, a desire, an illusion if you will. Appearance leading to idealization leading to the setting of hard-line standards is indeed a problem.

Fortunately I was clever enough, when the bees started dying off, to be able to orient my business to bee and yellow jacket removal. I became a remover as well as a keeper. So over the years of confronting wild colonies in all sorts of settings, I couldn't help but learn a few things, about myself as well as about them. One of the main things I discovered was there was something in my mind always looking for straight lines. I came to believe it was a mental disease picked up from my teachers. To repeat for emphasis: You *never* find a straight comb in nature. I mean *never*. This should tell somebody something.

Charles Martin Simon's Ten Principles of Beekeeping Backwards:

Principle #1: Work with Nature, not against Her.

Principle #2: Profit doesn't mean a whole heck of a lot if you're dead.

Our forefathers postulated that bigger bees would make more honey. The bigger the bee, the more nectar and pollen she can carry. The bigger the cell, the more it can hold. And so forth. So they devised a larger worker cell size, and it became the standard.

Principle #3: Dead bees make no honey.

Anatomically bigger bees are metabolically slower bees, more prone to disease and predation. And the diseases did come. The industry standard is a sickly bee.

My encounters with feral bees have instilled in me a greater respect for bees and contempt for the way we usually deal with them.

I knew I was finished with beekeeping as we know it the day I read the publication of the great scientific discovery of the "housekeeping gene" in relation to survivability in regard to *Varroa*. That was exactly where my suspension of disbelief finally snapped, and I realized our industry is directed by madmen. They have been driven mad by the fear of death and simultaneously compelled irresistibly toward it. Death of our beloved bees. Death of our beloved industry. Death of ourselves.

The Asian bee, the historic host for the mite, the bee that has coexisted with it successfully for a million years, does not usually inhabit enclosures. It hangs out in the open. This leads to the conclusion that when the mite drops off, it falls into the void, which is a good place for it. The immature Asian bee spends less time in the cell, which gives the mite less time to do its dirty work. Those are the keys, not the "housekeeping gene", never mind what the "scientists" have to say. But I am not meaning to imply that this "gene" does not exist. I'm questioning its interpretation. Just as I question the interpretation of the "bee dance". The traditional interpretation of the bee dance is destroyed categorically by the observation of one single factor: The human observer observes from above. The bee dances face to face on a lateral plane. What the bee perceives and what the human perceives are two entirely different things. I grant that the dance occurs. I do not grant that it communicates anything at all. It is a sharing of excitement. The knowledge of where the nectar or whatever is is deeper than that. The colony is a manifestation of generations integrated with the patterns of the environment. There is a great mind at play that humans are generally incapable of comprehending.

Another significant factor in the retardation of *Apis mellifera* is the chronic abuse perpetrated by the teachings of the art. Colonies left to their own devices have an entirely different consciousness than domesticated varieties. Domestic bees are constantly messed with. A colony is a unified Mind. When it is opened and manipulated, the thought process is jumbled. When it is smoked, it must turn its attention to other things. Stress is good. Stress is bad. It depends on the kind. Exercise is stress. Getting beat up is stress. One event can build self-esteem; the other can destroy it. But the effects are reversible, based on other conditions, the most significant of which being how the subject interprets the experience. There are many variables.

The skill with which one messes with a hive has a great deal to do with the effect the messing is going to

Continued on Page 48

🐝 BEE CULTURE

But will those not locked in on a contract raise their prices to grocery stores and bakeries and food processing agents? You may be in competition with one or more of these packers on a shelf, or you may be in a similar situation yourself if you buy small lots to supplement your production to meet your customer's needs.

It can get ethically messy here, but after all, business is business, right? And times are hard and getting harder. But before you shave your margins just to 'get' the business, make sure you know your costs, your customer's needs, and the image your product has. Local is better. Don't sell yourself or your product short.

The 'average' Winter (when compared to the past several mild-by-comparison), we had seems to have had some residual benefit. Spring and early Summer bloom, no matter the plant, seems to have been extraordinary. Maple and willow, always predictable and abundant, were even more so this season. Dandelions had warm sunny days and cool nearly crisp nights, perfect for nectar. Locust bloom in late May was phenomenal, and the weather cooperated for both nectar production and flying days, sort of. Fruit bloom was heavy too. Maybe, like biennial clovers, all the trees around here were in the heavy years, but they were ALL doing it.

As a result, early buildup wasn't hampered by food shortages. The only drawback was that populations weren't able to make full use of it. Too many weak colonies. Too many packages. Too many splits. Not enough boomers.

Drought is already a problem in several areas in the east and south, so any early gains may yet be lost. Those gains may be lost here, too, since it turned cool and wet at the end of May, but not yet. From what the big states tell me, though, it's going to be a pretty good year. Right Spring weather promises a good crop overall. Which adds an interesting wrinkle to what will happen to the price of honey generally, but specifically, to yours.

Have you taken advantage of one

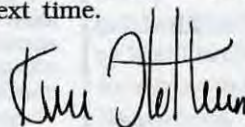
of most dynamic features of our web page (www.BeeCulture.com)? It's called Catch The Buzz. No, this isn't just a catch phrase to get you to look at the page or to make you think we are on top of current slang. Our Catch The Buzz feature is, first of all, free. No strings attached. You subscribe by signing in with your email address. Then, when fast-breaking news comes along, we send it to you, and what we send is always Right-Now stuff. We take our information from several news sources including the USDA, Universities, Industry Organizations or where ever we can find it, and get it to you THAT day. It is the fastest way we know to get out information you can use, that will help your marketing, your beekeeping and even just you. Here are a few of the latest items we have sent...

- ... Price Makes A Difference - \$.99 or \$.00
- ... Anti-dumping duties on Argentina and China (sent *that day*)
- ... Lyme Disease
- ... Varroa discoveries
- ... Remarks by the New Sec. Of Ag.
- ... Varroa resistance to Fluvalinate get on Checkmite+ schedule
- ... Tracheal mite testing service available
- ... USDA Organic standards set

Some of these appear in the *Gleanings* section of the magazine in the next available issue, but often they are approaching old news by then (but still new news in other journals). And some are old enough that even our next issue is too late to make the information useful or timely.

Sign up today for Catch The Buzz. Join the thousands who already have. It's on our web page...www.BeeCulture.com.

Tween Technologies. Jim Tew's photos last month were, pretty much, a disaster. There's a good reason, in hindsight, but I won't bore you with the details. Dr. Tew isn't that bad a photographer but his digital camera, our computer and the printer's new CTP system had a failure to communicate. We've fixed that. Until next time.



its likely value as a food for humans is frequently overstated and has never been proven in controlled experiments. This does not mean that its consumption may not be beneficial, as has been shown scientifically with various animal diets.

"Pollen has been added to diets for domestic animals and laboratory insects resulting in improvements of health, growth and food conversion rates. Chickens exhibited improved food conversion efficiency with the addition of only 2.5% pollen to a balanced diet as did piglets. The relatively high cost of pollen suggests the need for a detailed feasibility analysis of pollen as food additive or supplement.

"Only a good mixture of different species of pollen can provide the average values mentioned in the tables describing the composition of pollen. The real value of diversity of pollen content, however, lies in the balance of these nutrients and the synergistic effect of the diversity as well as more subtle effects or characteristics related to their origin rather than their quantitative presence. Those very subtle characteristics and sensitive compounds are easily lost with improper storage and processing, something to carefully watch when making or buying quality products containing 'bee' pollen.

Given the present uncertainty concerning the value of bee-collected pollen for human consumption, the bottom line for the potential pollen marketer remains a "no brainer." As Ms. Harman says, *make no claims.*

Dr. Sanford is Extension Specialist in Apiculture, University of Florida. He publishes the APIS Newsletter: <http://www.ifas.ufl.edu/~mts/apishtm/apis.htm>

PLANTATION BEE COMPANY

P.O. Box 20371
St. Simons Island, GA 31522

912.634.1884



ITALIAN QUEENS

10-19 \$7.75

20-99 \$6.25

100-up \$5.75



Minimum Orders 10 Queens

We pay Air Mail Postage

?Do You Know?

Answers

1. **True** Research has shown that sacbrood virus can multiply in adult bees without any visible symptoms. The sacbrood virus accumulates in the heads of infected adults, with much of the virus accumulating in their hypopharyngeal glands. In adult drones sacbrood has been reported to multiply in the brain.
2. **True** Individual honey bees are so specialized for particular tasks that they are unable to survive for any length of time when separated from the colony.
3. **False** The queen honey bee has considerable influence on the orderly life processes in the colony. She, however, is not actively and consciously guiding or organizing worker bee activities.
4. **True** Queens typically live much longer than the other members of the colony. If they have not been superseded earlier, queens usually die of old age when 3 or 4 years old, though a few have been reported to live as long as 5, 6, or even 7 years.
5. **True** Many factors both internal and external affect the behavior of individual honey bees. Some kinds of activities are limited by internal physiological conditions associated with stage of gland development. Numerous external factors, i.e. odors, light, sounds, magnetic fields etc. also stimulate various responses. The genetic composition of the bee is now known to exert a major effect on behavior. Each bee has a tendency to express different behaviors according to their genetic profile.
6. **True** Adult honey bees show aging characteristics. They show a deterioration in flight performance and a change in thermal preference to cooler temperatures, thus move from the center of the brood nest to the exterior regions. In addition there are changes in the functioning of the various glands as the bee ages. All bees do not necessarily engage in all types of activities. Some bees "age prematurely" and initiate field foraging, without having been a guard bee or engaging in some other kind of activity such as housecleaning.
7. **True** Without beekeeper intervention, a colony with laying workers will eventually die since the worker population is not replaced because laying workers can only lay unfertilized eggs that become drones.
8. **False** Isolated queens can feed themselves on sugar candy and survive for many weeks, but queens in colonies seldom, if ever, feed themselves.
9. **False** When a colony absconds, the entire colony moves to a new location in response to unsatisfactory conditions in the nest or environment. This behavior is not associated with queen rearing, as it is when a colony is preparing to swarm.
10. **True** Honey bee queens mate with several drones resulting in a complex structure of genetic relationships within a honey bee colony. There are usually 7 to 10 subfamilies depending on the number of drones the queen mated with. A subfamily would be a group of workers fathered by the same drone.
11. E) Guard Bee
12. E) 5%
13. A) 25%
14. B) 21
15. Licking the cell walls
Removing cappings
Smoothing cell edges
Removing the remains of cocoons/larval excreta
Covering any remaining material with a thin layer of wax
16. The mauling and possibly killing of a queen by worker honey bees is called "balling behavior" or "balling the queen." This behavior is normally observed when a colony is disturbed soon after a new queen is introduced to the colony.
17. Honey bees are truly social insects since:
 - A) Members of the same generation use the same composite broodnest.
 - B) There is a reproductive division of labor, a worker caste cares for the young of the reproductive castes.
 - C) An overlap in generations so that offspring assist parents.
 - D) Individual bees are unable to survive by themselves.
18. Drone production and tolerance is related to food stores and nectar flows. When flowers cease to provide nectar for the colony (nectar dearth) either in the fall or more rarely at any time of the year, workers no longer tolerate the drones and begin forcing them from the colony.
19. Initially the cooling process involves cluster expansion and fanning. Groups of fanning bees are found throughout the broodnest and at the nest entrance; expelling currents of warm air from the hive. When cluster expansion and ventilation cannot cool the nest adequately, water collection and evaporation are used.

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 Pathology at Mississippi State University, Mississippi State, MS.

GLEANNINGS

JULY, 2001 • ALL THE NEWS THAT FITS

Against Dumped Imports U.S. HONEY INDUSTRY FIGHTING BACK

The U.S. honey industry, battling for its life against huge amounts of unfairly traded, low-priced honey from Argentina and China, applauded the May 7 announcement of antidumping duties on imports from the two countries.

As determined by the Department of Commerce, the preliminary antidumping duties for Argentine exporters range between 50% and 61%, and the duties for Chinese exporters range between 47% and 184%. The duties are now being imposed on all honey imports from the two named countries. For all but five Chinese exporters, Commerce will retroactively impose antidumping duties to February because these exporters surged imports into the United States prior to Commerce's preliminary determination in order to beat the imposition of the duties.

The May 7 announcement is the next step in an unfair trade action filed with the Department of Commerce and International Trade Commission (ITC) September 29, 2000 by the American honey producers Association (AHPA) and the Sioux Honey Association (SHA).

According to AHPA President Richard Adee, whose organization represents about 800 domestic beekeepers, "The livelihoods of AHPA members depend on being able to sell their raw honey at a profit in our own market. The Commerce Department in essence

confirmed what we claimed in our petition: that Argentine and Chinese honey is being sold here at prices far below the cost of producing the product in those countries. This is the definition of dumping, which is against U.S. trade law and the rules of world trade as set forth by the World Trade Organization."

Said SHA President Jerry Probst "There is no way the hundreds of domestic honey producers who belong to the Sioux Honey Association can compete with the Chinese and Argentina governments and exporters, whose unfair trade practices enable their honey producers to dominate our market with below cost pricing. We are counting on the U.S. government and our unfair trade laws to right the wrong and save this important industry. We are gratified with this decision by the Department of Commerce."

Earlier this year, the Department of Commerce found that the government of Argentina unfairly subsidized its honey industry, resulting in a 7% tariff - known as a countervailing duty - on imports.

Commerce will now begin the final phase of its antidumping duty investigation. Concurrently, the ITC will begin the final phase of its injury investigation. Final determinations from both agencies will be issued before the end of the year.

QUEENSLAND OKAYS HONEY MEDICINE

The first medically approved honey - with high antibacterial properties - is to be used for the treatment of wounds and some infections in Queensland.

State Primary Industries Minister Henry Palaszczuk said the product - Medihoney - has been registered by the Therapeutic Goods Administration and would be available on a doctor's recom-

mendation for use in the state's public hospitals.

The product - which costs A\$20 for a 50-gram tube - was developed by Capilano Honey and trials on hundreds of patients found it attacked golden staphylococcus and other antibiotic-resistant superbugs. It helps heal abscesses and some burns by promoting tissue growth with less scarring.

This Is Really Weird MELALEUCA'S DAYS ARE NUMBERED

Agricultural Research Service scientists and colleagues have identified a team of two organisms - the Fergusonina fly and the nematode Fergusobia - that might help limit the spread of the invasive weed *Melaleuca quinquenervia*. Melaleuca infestation causes about \$168 million in environmental losses every year.

Ted Center of ARS' Invasive Plant Research Laboratory in Ft. Lauderdale, FL, and University of Florida nematologist Robin M. Giblin-Davis collaborated with researchers from the University of Adelaide and the Commonwealth Scientific and Industrial Research Organization, and the ARS Australian Biological Control Laboratory.

Like the melaleuca snout beetle *Oxyops vitiosa*, the Fergusonina fly and the tiny Fergusobia worm effectively attack melaleuca flowers and leaf buds, but in an entirely different way.

According to Giblin-Davis, the female Fergusonina fly carries the nematodes in her ovaries and deposits them - along with her eggs - into young melaleuca buds. The female Fergusobia nematodes and the fly larvae that hatch then feed

on enlarged plant cells created by the microscopic nematodes. Eventually, galls form on infested buds, preventing flowers and seeds from developing.

To avoid introducing biological control agents that might impact non-target organisms, host-specificity studies were conducted in Australia. Giblin-Davis traveled more than 8,000 miles and collected different fly/nematode partnerships from a variety of melaleuca and related species, such as eucalyptus. Preliminary indications are that this fly/nematode pairing is so host-specific that each pair affects only a single species of melaleuca, eucalyptus, or closely related species.

If the duo performs well in host-specificity tests in Florida, it might soon be released at melaleuca-infested locations.

An article describing this research appears in the April issue of Agricultural Research, ARS' monthly magazine, found on the World Wide Web at: <http://www.ars.usda.gov/is/AR/archive/apr01/bush0401.htm>

ARS is the chief scientific research agency of the U.S. Department of Agriculture.

EAS IN MASS

The Eastern Apicultural Society of North America, Inc., will hold its annual beekeeping Short Course and Conference during the week of 06-10 August 2001, at the Massachusetts Maritime Academy, on Buzzards Bay, Cape Cod. Don't miss this one! It'll be BIGGER than big. EAS 2001 website URL: www.capecod.com/bcba/eas2001.html Contact: Jan Gaglione, Registrar (978) 535-1622, email jgagli1646@aol.com -or- Kathy Hough, Registrar (978) 468-6000, beesbest@mediaone.com Registrations must be postmarked no later than July 15, 2001, but registrations received this late are subject to late fees, and some events will be full. Don't be disappointed, please call first to verify.

Price Does Make A Difference SHOULD IT BE 99 OR 00?

Consumers instinctively think "value" when they see 99 cent price endings on menus, and they're more likely to think "quality" when they see a price ending in "00," according to an Ohio State University study. Knowing this information could help restaurant owners position themselves more precisely to the customers they hope to attract, said H.G. Parsa, co-author of the study scheduled to appear in a forthcoming issue of Cornell Hotel and Restaurant Administration Quarterly.

"This isn't a decision-making tool that's based on economics," said Parsa, associate professor of hospitality management in the College of Human Ecology. "It's more psychological. If you are in the high end of the market, you want to maintain the image of quality. If you're running a fast-food or quick-service restaurant, don't go after that extra penny - you want to keep that 9-cent ending to project an image of value."

The findings support results found in studies with other products, Parsa said. For example, a 2000 Rutgers University study found that people reading an advertisement for a dress were more likely to judge it as relatively low-priced - and lower in quality - when advertised at \$49.99 rather than for a penny more, \$50.00, even when everything else in the ad remained the same. "You can see this phenomenon with all sorts of products," Parsa said. "If you're buying a piece of million-dollar jewelry, you're looking for quality and not looking for a \$999,999 value. But if you're just spending a few hundred dollars, you're more likely to think you're get-

ting a good value if the item is priced at \$199 or \$399 rather than \$200 or \$400." For the first part of their study, Parsa and graduate student Sandra Naipaul gathered menus from 231 restaurants in the Columbus area. Of the 3,290 menu items from the 62 fine-dining restaurants in the study, they found the final digit of "9" was used on 13 percent of the menu items, and a final digit of "0" was used in 30 percent of the menu items. A final digit of "5" was used in 56 percent of the cases. However, when the researchers broke down the category into independently owned restaurants or private clubs and compared their menu prices with those used by national and regional restaurant chains, the difference was striking: The more exclusive restaurants almost always preferred an ending digit of "0" while the chains most often used the ending digit "9." Of the nearly 2,900 menu items from 92 menus from quick-service restaurants, the researchers found about one-third of the menu items ending in "0" and one-third ending in "9." Surprised, they again reviewed the menus and realized Chinese and other Asian-themed restaurants skewed the results. After removing those 35 menus, results changed dramatically: Less than 13 percent of the quick-service menu items ended in "0," and over 63 percent ended in "9." Many Chinese restaurants avoid 9," Parsa said. "That's because in Chinese culture, '9' traditionally was reserved for the imperial family. 'Eight' is used, because it's considered the luckiest number. They tend to stay away from 4, because it's considered an unlucky number."

After reviewing how restaurants already price menu items, the researchers then turned to consumers and studied their responses to menu items' price endings. For this part of the study, 73 undergraduate students rated one of three versions of a menu of a fine-dining restaurant and one of three versions of a quick-service restaurant menu. The versions were identical in all aspects except for the price endings. The students rated the menus for overall value or overall quality. Then, the students were given one of two scenarios to read. In the first scenario, the participants were asked to review three menus and decide which of the restaurants they would choose if they were a department store general manager and they had to take their company's CEO out to dinner. They were directed to choose the restaurant they felt was the highest quality. In the other scenario, they were asked to review three menus and choose among restaurants if they had agreed to buy lunch for a group of classmates working on a group project. In this case, they were asked to choose the restaurant offering the best value. In both cases, the menus had price-endings all ending in "0," all ending in "9," or a mix of the two. When reviewing the responses, the researchers found that participants tended to choose "0" price endings when choosing for high quality, and tended to avoid "0" endings when choosing for high value. The research shows a synergy between consumers' expectations when they see the price of an item, and the image that restaurants hope to project, Parsa said. "By constantly looking at the numbers in prices and making a determination of the quality of those items, we learn what to expect and it becomes a part of our culture," Parsa said. "It's a subconscious learning, though - nothing really overt." Knowing this, restaurant owners should consider it when setting prices of their menu items, he said. For example, he said, when a quick-service restaurant needs to adjust the price of a 99-cent item, it might as well increase it to \$1.09, keeping the image of value, than merely increasing it a penny to \$1, which doesn't reflect the intended image of value. Upscale restaurants should avoid price ending with "9" to avoid the image of value, and use the ending digit of "0" to reflect the image of quality.

TREATING RESISTANT VARROA

Farmers have long known about insect resistance to chemicals. In recent years, U.S. beekeepers have discovered the same problem when it comes to controlling bee mites. Over the last decade, the honey-bee-attacking *Varroa* mite has developed resistance to the pyrethroid pesticide fluvalinate. That has spurred interest in alternative chemical controls for the mite, the number one pest of U.S. honeybees. But finding alternatives can be costly. Agricultural Research Service (ARS) studies on toxicities of anti-mite compounds could help prevent future wasteful outlays of research dollars on development of pesticides most likely to soon become ineffective. For example, recent research points to futility in considering the formerly registered acaricide amitraz as an alternative for *Varroa* mite control. Scientists at the Kika De La Garza Subtropical Agricultural Research Center, Weslaco, Texas, have found that resistance to fluvalinate commonly goes hand-in-hand with resistance to amitraz. Chemically, fluvalinate and amitraz aren't related, but mite detoxifying enzymes may render both ineffective. On a positive note, ARS research at Weslaco does show that fluvalinate-resistant *Varroa* mites become significantly less resistant after a two-year hiatus from treatments. The Weslaco scientists are seeking alternatives to extensive use of less environmentally friendly pesticides such as coumaphos, an organophosphate. For example, the scientists are researching the biology of fluvalinate-resistant *Varroa* mites, hoping to find ways to survey mite populations for lack of resistance so coumaphos treatments can often be avoided. By late last year, the U.S. Environmental Protection Agency (EPA) had approved exemption labels in 45 states to allow strictly controlled use of plastic strips impregnated with coumaphos to control *Varroa* mite and another pest, the small hive beetle *Aethina tumida*. Honey bees provide a \$14.6 billion annual benefit to U.S. agriculture.



"An Association Strictly For Beekeepers"

THE AMERICAN HONEY
PRODUCERS ASSOCIATION

The AHPA is the **only** national beekeeping organization that reserves its voting privileges for beekeepers. All segments of the honey industry are welcome, but only our beekeepers have a vote in the organization.

Join and Help us:

★Promote U.S. Honey ★Promote Bee Research ★Stop Pesticide Abuse Near Bees ★Educate Congress of our Beekeeping Needs ★Keep the Beekeeping Industry Updated with our *Honey Producer* Publication
Dues: Hobbyist - \$20; Sideline - \$75; Commercial - \$200

Make checks payable to: AHPA

536 Ashmont Rd. • Madison, SD 57042

Ph: 605-485-2221 Home Ph: 605-256-4700 Fax: 605-485-2231

CCC: Honey-0; Sugar 793,205 Tons

SUGAR SUMMARY FOR THE YEAR

The U.S. Department of Agriculture (USDA) projects sugar production for fiscal year (FY) 2002 at 8,435 short tons, raw value (STRV), a slight decrease of 64,000 STRV from the total estimated for FY 2001.

Cane sugar production for FY 2002 is projected at 4.185 million STRV. Area harvested is not expected to change very much from FY 2001. Florida sugar production for FY 2002 is projected at 2.060 million STRV. Based on a projected sugarcane yield of about 37.25 tons per acre and trend growth in productivity, the expected value of the sugar yield is 4.72 tons per acre. Louisiana sugar production for FY 2002 is projected at 1.675 million STRV. Increased adaption of high yielding cane varieties and a return of more favorable growing weather imply an expected value of sugar yield of 3.61 tons per acre. Texas sugar production for FY 2002 is projected at 165,000 STRV, down from a year earlier due to anticipated lower yields. Hawaiian sugar production for FY 2002 is projected at 270,000 STRV, predicated on improved yields in Maui and Kauai. Puerto Rican production is projected to equal 15,000 STRV.

Beet sugar production for FY 2002 is projected at 4.25 million STRV. The USDA's Interagency Commodity Sugar Estimates Committee for sugar projects sugarbeet area harvested at 1.36 million acres. USDA will release the forecast for area harvested in June.

Because the refined and raw sugar tariff-rate quotas (TRQ) have not yet been announced by the USDA, they are not projected at this time. Sugar imports outside the sugar TRQ for FY 2002 are projected to total 390,000 STRV. This amount includes an expected 265,000 STRV under USDA Re-export Programs and the Polyhydric Alcohol Program. The USDA projects sugar supply extracted from sugar syrups imported under HTS 17029040 at 100,000 STRV and high-tier tariff sugar imports at 25,000 STRV.

Sugar exports are projected at 125,000 STRV, the same as the current fiscal year. After netting out deliveries made for the Sugar-Containing Products and Polyhydric Alcohol Programs, along with deliveries for livestock feeding (20,000 STRV), domestic food and beverage deliveries are projected at 10,320 million. Projected growth is only 95,000 STRV or 0.9 percent.

U.S. cane sugar production for FY 2001 is estimated at 4.079 million STRV, only slightly above the estimated total for FY 2000. Production increases in Florida and Texas are offset by declines in Louisiana and Hawaii. Beet sugar production for FY 2001 is estimated at 4.420 million STRV, based on sugar recovery significantly below that achieved last year.

TRQ sugar imports for FY 2001 are estimated at 1.245 million STRV. As of May 3, 2001, sugar imports under the TRQ have amounted to 674,815 STRV, or about 51 percent of the amount estimated to enter for FY

2001. Sugar imports outside the sugar TRQ for FY 2001 are estimated to total 453,000 STRV, including 330,000 STRV under the combined Refined Sugar Re-export Program, the Sugar-Containing Products Program, and the Polyhydric Alcohol Program. Based on the pace to date, the USDA estimates sugar supply extracted from sugar syrups imported under HTS 17029040 at 100,000 STRV. High-tier tariff sugar imports for FY 2001 are estimated at 8,000 STRV.

Total deliveries for FY 2001 are estimated at 10,345 million STRV. After netting out deliveries made for the Sugar-Containing Products and Polyhydric Alcohol Programs, along with deliveries for livestock feeding (20,000 STRV), domestic food and beverage deliveries are estimated at 10,225 million. Sugar exports occurring under the Refined Sugar Re-export Program are estimated at 125,000 STRV. Ending stocks are estimated at 1.946 million STRV, for an ending stocks-to-use ratio of 18.6 percent. Of the total, the Commodity Credit Corporation owns 793,205 STRV. The ratio of privately held ending stocks-to-use is estimated at 11.8 percent.

New Treatment for Varroa APILIFE-VAR GETS EPA NOD

Steve Forrest, President of Brushy Mountain Bee Farm announced in late May that after reviewing the data, the Environmental Protection Agency would put Apilife-Var, a thymol and camphor product (two naturally occurring compounds) for the control of both *Varroa* and tracheal mites, on the fast track for registration in the U.S., and should be completed by and ready for sale by early August, 2001.

Apilife-Var is manufactured in Italy and Brushy Mountain Bee Farm, and their 100+ dealers will have sole distribution in the U.S.

"We'll have another effective and efficient product to control *Varroa* this Fall" said Forrest, "and I'm glad the EPA is moving on this at the urging of hundreds and hundreds of U.S. beekeepers."

Brushy Mountain Bee Farm is located in Moravian Falls, North Carolina, and manufactures and sells a complete line of supplies for beekeepers. They can be reached at 800.BEES-WAX, or www.Beeequipment.com.



"Darn, another government regulation.
All hives must
have a no-smoking section."



Dominion & Grimm Inc.
164 Yankee Park Road Suite 101
Fairfax, VT 05454
Tel: (802) 893-3487 • FAX: (802) 524-9643



Large selection of containers available.

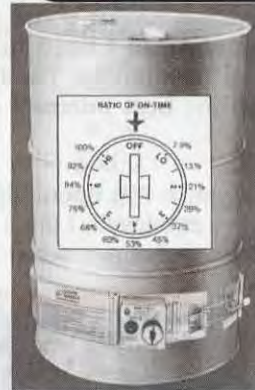
HEAT IT UP!

Our heaters are safe, fast and efficient. For ease in extracting, bottling or liquefying granulated honey try:

- **Pail Heaters** – Designed for Round or Square 5-Gallon Containers.



- **Extractor Heater** – For 2, 4, 6 and 12-Frame Extractors



- **Drum Heaters** – 120 or 240-Volt – Fits standard 55-Gallon Drums

**ITALIAN QUEENS
SUMMER PRICES**
1-9 – \$9.00 • 10-24 – \$7.50
25-up – \$7.25

Prices include postage
Clipping or marking . \$1.00 each.
RUSSIAN QUEENS!
ADD \$3.00 per queen to these prices.

Contact us for information and pricing.

WALTER T. KELLEY CO., INC.

3107 ELIZABETHTOWN RD. • P.O. Box 240 • Clarkson, KY 42726-0240
Ph. (270) 242-2012 • FAX (270) 242-4801
Visit our Website: www.kelleybees.com

With Credit Card
Call Toll-Free
1-800-233-2899



Display Advertisers

Bees & Queens

Bee Happy Apiaries	11
D&J Apiary	11
Glenn Apiaries	33
Hardeman Apiaries	16
Harrell & Sons	36
Homan-McMasters	28
Koehnen, C.F. & Sons	30
Miksa Honey Farm	30
Morris Family Apiaries	16
Olympic Wilderness Apiaries	18
Pendell Apiaries	28
Plantation Bee Co.	38
Rossman Apiaries	44
Shuman's Apiaries	16
Strachan Apiaries	30
Taber's	4
Wilbanks Apiaries	5
York Bee Co.	Inside Back

Associations/Education

American Beekeeping Federation	33
American Honey Producers	42
Cornell Beekeeping Class	30

Equipment

Apiary Forklift	10
CC Pollen	10
Cowen Mfg.	9
Golden Bee Products	9
Dakota Gunness	1
Hackler Honey Punch	33
Humble Abodes Woodenware ...	4
Pierco Frames	1

Related Items

Bee Cool Ventilators	30
Bee-Quick	19
Bee Services Honey Bottler	16



Better Way Wax Melter	16
Gobeekeeping.com	16
Honey B Healthy	4
Howalt-McDowell Ins.	4
Observation Hive	33
R. M. Farms	28
Tuttle Apiary Labs	16

Suppliers

B&B Honey Farm	29
BetterBee	23
Browning Cut Stock	30
Brushy Mountain	23
D&G Containers	43
Dadant	3
Endless Mtn. Honey Stix	4
Honey Bee Container	29
Kelley, Walter	47
Mann Lake Supply	Back Cover
Maxant Industries	9,10
Mid-Con	1,9,10
Precision Plastics	36
A.I. Root	6,34
Ross Rounds	36
Rossman Apiaries	44
Ruhl Bee Supply	16
Sherriff, B.J.	Inside Back
Simpson's	28

have on the future. The master manipulator will do it so that the bees will never even notice anything happening. Indeed, they will proceed with their process as though nothing was happening at all. The quality, quantity, and kind of mentality of the manipulator have everything to do with this. Some beekeepers make bees nervous just by showing up in the proximity of a hive. Woe be unto those keepers and their bees if they light the smokers and crack the hive lids. Beekeeping should be licensed, and I should be the licensing entity. There would be very few beekeepers. Again I need to point out: This is not arrogance, it is humility. For I truly have your best interests and the best interests of the bees at heart.

Principle #4: Don't fight it.

When I think of all the years I've spent fighting ants and all the techniques I've employed, I don't know whether to laugh or cry. Right now I've got naked honey comb and open bowls of honey in my kitchen, and plenty of ants too, but they're leaving the honey alone. How come? Because I don't fight them. I feed them. There is a bowl of honey on the counter established for them, where they can come and get all they want. At first they were hitting it heavily, then they lost interest. Apparently, if they can't have it, they want it. If they can have all they want, they don't want it.

Principle #5: Beekeeping is not about honey.

Principle #6: It's not about money.

Principle #7: It's about survival.

Well, actually, it's not about survival, since nobody survives. It's about the quality of life while you're alive. Do your best to make the bees' life the best it can be and it will be the best it can be for you. Stop thinking "maximum production". Substantially less than most is way better than nothing at all. Learn how to leave the bees alone. Benign neglect is the way. Provide them with appropriate cavities. Standard beehives, if they're right, are acceptable habitations for bees, but don't use foundation.

In addition to the size consideration, foundation is contaminated. Only the oldest, most used wax gets rendered into foundation. Old wax absorbs and retains contaminants such as pesticide. Go ahead, use frames. Frames do make it easier to perform manipulations. But actually, just the top bars are enough, at least for brood

chambers. Further up the hive, you might want complete frames for the definition of the bottom bars, to maintain the space between the top of the frame below and the bottom of the frame above.

I have 15 hives as of this writing (December 2000), after years of having none at this time of year. How did I do it? I don't know, and that's the answer. As the years have progressed, I have tried more and more to keep them as close to wild as possible, to not mess with them. I do harvest some honey, pollen, and propolis, but I do it with a leave-alone attitude. I am hoping for their well being. Beyond that I am asking nothing from them, expecting nothing. If they are prospering I add supers. If they make extra honey, I take some. When my combs are crooked and stuck across several frames, I use bee escapes to clear the supers before removing.

I crush the combs and strain them through a system of perforated plastic buckets. I keep quite a few cut combs around to eat au naturel. The wilder, more funky combs may very well be the best.

I've been reluctant in recent years to invest money in equipment, because of the *Varroa* situation. Consequently, I'm using old equipment a normal beekeeper would have thrown out a long time ago in fact quite a bit of it has been thrown out by normal beekeepers and I'm liking it better and better the worse it gets.

I'm thinking about running hives without bottoms and up on stands this season, at least during the warm months, and considering designing a bottom board to catch and destroy mites.

Principle #8: Forget everything you ever learned and start observing what is really going on.

In regard to this last principle. One of the first injunctions I received starting out was to keep accurate records. But I realized that accurate records would be obfuscations at best. When you refer to a notebook describing the events of a hive to date, you will not see the hive as it actually is. The level of information that can be cataloged is not vital, has nothing to do with what's going on with the hive in question, and prevents you from seeing what is.

Furthermore, I have observed that the harder you fight to keep your bees alive, the faster they die. Cut them loose, give them freedom, the freedom to die as well as the freedom to live, and they live better.

- Principle #9:** Leave your bees alone.
- Principle #10:** Leave me alone.

Sure, I'm crazy, and proud of it. ☺

Charles Simon practices these 10 principles with his bees in Soquel, California.

