Bee Culture

AUGUST 1993

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COLUMNS

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Basics For Extracting
If you're just getting started in this business you're soon going to find out that removing honey is not as simple as it may seem. But don't despair – here's some help.
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Cover
Purple star thistle belongs to the *Centaurea* group of flowers in the composite family. Common names include Star Thistle, Purple Star Thistle and Knapweed. An introduced species, it is a perennial, returning each year from the roots. Close cousins include Bachelor's Buttons, Basket Flower, Dusty Miller, Cornflower and Mountain Bluet. Primarily found in waste areas, great stretches can be seen along highways from eastern Pennsylvania to Wisconsin, south to Georgia and Missouri. It produces a delicate but very sweet, light to medium amber honey from mid-July to freezing. When found in quantity it is of great value as a honey plant. It crystallizes slowly, if at all when the predominate source of nectar.
Photo by Kim Flottum

Nutrition Facts
Serving Size 1 Tbsp (21g)
Servings Per Container 22

Amount Per Serving	
Calories 60	
	% Daily Value*
Total Fat 0g	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 17g	**6%**
Sugars 16g	
Protein 0g	

*Percent Daily Values are based on a 2,000 calorie diet.

INNER·COVER

The last time the Mississippi took an overdose of steroids I was pretty young and attending college in central Wisconsin. A good friend, who lived down the hall in my dorm got a call from his parents saying the family farm was in imminent danger of being flooded, and could he come home right away and help out. And if he had any friends that could lend some muscle maybe they could come, too. So just before dawn on a Thursday morning my friend and I left for his home near Red Wing, Minnesota.

And for four days, in the rain and under the watchful eyes of armed-to-the-teeth National Guard troops I filled sand bags, moved sand bags, stacked sand bags and dodged a particularly nasty creature locally called a River Rat.

They were actually some kind of rat, but as I recall they were about the size of a large cat, and because the rising water was flooding them out of their nests they were in a real nasty mood. Running up your pants leg, all the way up, and chomping the first obstacle they encountered was a common occurrence for 'baggers' They kept you alert, those River Rats. Especially after you saw a few nearby baggers fall to the ground screaming things this 18 year old small town kid had never heard before. It was quite educational, in a vocabulary sort of way.

I saw the tail end of lots of these creatures. But one, with blood in his eye and my open cuff in his heart wanted to change all that. Fortunately one of those alert National Guard guys emptied half a clip into its water logged body just in time. That River Rat died on the toe of my boot.

Four days later I went back to college. Very tired, a bit wiser and a little older. But I left all the problems behind. My life went on as usual, unbitten and unflooded. But those who lived there, those who had to clean up that awful mess were left to, well, clean up that awful mess.

This year the Mississippi is back on steroids, and there's lots of people who will be cleaning up that same mess again, and will be for some time to come.

Some are beekeepers, of course. Tales of boxes floating down stream, while rare, have been heard and there's a cost to replace those boxes and bees.

But the greatest loss isn't flooded bees, but flooded honey flow. Rain, rain, more rain and lots of cool weather have made life miserable for bees and their keepers.

Reports in July predict a certainly-reduced crop over much of the mid-west, especially in the steroid-enhanced river areas. But there's been generous amounts of damp, cool weather over much of the Dakotas, too. A bit west has been less wet and parts of the mountain states are doing great. The east coast, meanwhile, has been on the grill much of the summer but the crop seems to be doing well. Maybe 'well done' would be a better phrase here. But if they don't get off that grill pretty soon they tell me it'll be dry-up-and-blow-away time before Labor Day.

So if the weather dries up or gets wet, cools off or warms up, depending on where you are of course, there's still plenty of season left for a crop.

In the meantime, I extend an empathetic hand to any and all who spent June and July filling sandbags, moving sandbags or stacking sandbags. Especially if one of those River Rats got a good run at an open cuff.

•

On occasion we try to pass along some better-than-that-above news, and there are some this season who haven't been flooded or frozen or baked. For them, and for most I guess harvest season is upon us. With that squarely in mind coupled with the annual hoopla surrounding National Honey Month slowly taking shape, I thought I'd revisit the basics of producing a press release.

A press release, if you don't already know, is one of those attention getting devices that businesses or associations use to grab some free publicity (or advertising, if you're clever enough) for an event you're involved with.

Event? Anything you want some publicity for can be considered an event. An association meeting is one. Not the monthly in-the-church-basement venue, but the annual extravaganza at the fairground event. Or, an all day beekeeping class held at the local high school would qualify. Perhaps you could stage an event in cooperation with a local farm market, like a big display, an extracting demo, on-site bottling, something that runs all day. That certainly qualifies.

Continued on Page 456

Rivers Rising, Releases Writing and A Comment From David Brinkley

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NEXT MONTH

September is winter's first step and we've taken some steps of our own to help get ready for that change in seasons. Next month we'll have some of the get-ready tricks that everybody who has to shut down needs to take.

Simple things – like protecting against tiny mice is one step to take, and Dick Bonney takes a big look at how and why. But ventilation is important, too, and Dick looks at a simple, but effective means to reduce moisture and increase ventilation – easily and inexpensively.

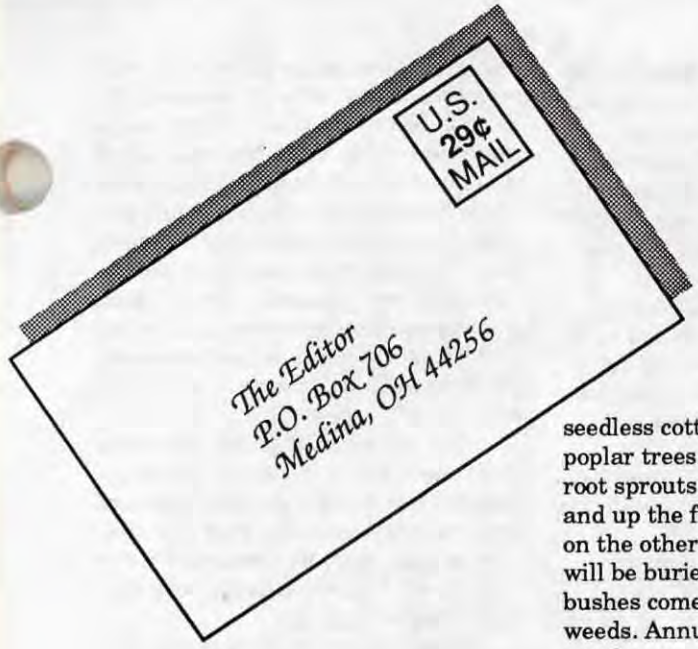
Steve Taber takes his typical off-center look at the art and science of wintering bees next month. You'll appreciate his comments, and pick up some pointers – don't miss it.

But in October we'll have an even more detailed winter plan. Starting in the northeast, Roger Morse winterizes colonies for extreme conditions; moving south Dewey Caron takes a look at 'Winter In Between' covering the parts of the country not extreme in cold, or heat. Then Keith Delaplane outlines the information needed to winter in the south – there's more than you may think. Don't miss this 'Winter Picture' in the October issue.

But September is National Honey Month, and we haven't neglected this auspicious occasion. Three pieces touch the best part of September – an interview with a successful beekeeper and marketer; random thoughts on promoting honey; and an overview on how to use the time to your best advantage for promotion, advertising and exposure. Don't miss these three.

Finally, September signals the beginning of another school year, and each year it seems our children edge even further from the natural world around them. More are versed in the problems of South American rain forests than can identify three flowering plants in their back yard.

But the humble honey bee and the whole world she touches can help that – if informed and knowledgeable teachers know how. Developing a curriculum that teaches nature using honey bees as an example is explained, right here, next month.



MAILBOX

■ Locusts Mixed Blessing

I enjoyed the article written by Richard Dalby, however, I have a black locust tree and I find that the tree sends up sprouts everywhere. I did have ten planted at the north end of my four acres. This tract of land butts up to a housing addition. My locust trees started sprouting up in groves. I hired a man to dig them up and still I am having sprouts come up. I cannot allow these trees to come up in the yards of everyone in that addition. The one tree I have left is at my gate that we drive the farm equipment in. The sprouts are coming up in the ditch and in my garden.

I think that the tree is every bit as good as you said it was. The only trouble that writers can cause is not telling the faults as well as the attributes of a peculiar plant. Two of my neighbors have what they call seedless cottonwood – I call them poplar trees. They are coming up by root sprouts in my field on one side and up the front ditch on our street on the other side. In a few years, I will be buried in poplar trees. Vitex bushes come up from seeds like weeds. Annual leonurus reseeds like weeds.

It is true that these are all excellent honey plants. Just be sure and tell your readers that they should be prepared to remove some of these plants should they start invading the property of their neighbors.

The poplar tree is not a honey plant. It is just an example of an invasive plant.

Wyvonne Robertson
Allen, TX

■ Changes

I have subscribed to Bee Culture for quite a number of years and thoroughly enjoy the magazine. The articles are generally well written by knowledgeable people. However, in the November, 1992 issue, the article written by "O.B. Wiser" on building tops and bottoms had some erroneous information that could cause some problems for anyone wanting to build their own as I do. In fact, I had the wood cut out for 10 tops before I suddenly realized that it could not be as indicated in the article.

In the instructions on building the top, Mr. Wiser says to cut the 3/4" lumber to 21" lengths, but on the drawing he has shown that they are 20" Neither of these is correct by the way. Now we all know, (or should if we build our own wooden ware), that the hive body and supers are 20" long. If the end pieces of the top have a 3/4" x 3/4" dado cut, and the top boards fit into the dado of each end piece, then we lose 1-1/2" from the length of the board (3/4" x 3/4" equals 1-1/2"). So we can see that 20" could not possibly be correct, nor could 21" The distance between the end pieces on the underside of the top must be at least 20" Thus 20" + 3/4" + 3/4" equals 21-1/2" I allowed 1/16" to 1/8" extra to make sure that the finished top would fit over the hive body. I also use grabber screws instead of nails for assembly. They do not work loose like nails do. I also wonder why he has the cleat on the bottom board 1-1/2" x 1-5/16" Why not make it square, either 1-1/2" or 1-5/16" Doing this would save an extra set-up on the saw. The 3/16" difference between 1-1/2"and 1-5/16" could not possibly make any differ-

Continued on Next Page

MAILBOX

ence in the function of the cleat.

Mr. Wiser also mentions packing hives with tar paper and straw, but I could not tell whether this was to prevent wood rot, or to keep bees warm in winter. Either way I feel packing hives is a waste of time, labor and money. When straw becomes wet it holds moisture and becomes a moldy mess. If the straw is to keep bees warm it is also a waste of time. Cold does not kill bees, moisture does. If you provide top ventilation and adequate food, that is all they need.

Bill Garrison
Bountiful, Utah

■ Solar Power

Recently there has been alot of publicity about the State of Ohio hosting this nation's first Nuclear Waste Site for "low-level" radioactive waste. Ohio already has the world's largest Toxic Waste Incinerator along the riverbanks of East Liverpool, Ohio. The Ohio EPA has a tremendous number of other concerns.

We the people need a SAFE, CLEAN, and RENEWABLE source of energy.

Solar energy may be a healthy part of the solution. The cost of this technology has dropped 75% in the last 10 years. I am convinced that mass production will significantly reduce the costs even further.

The National Audubon Society has launched a simple but bold campaign, through their SOLAR BRIGADE program. The idea is that people send a notice along with their monthly electric bill, demanding 10% solar in 10 years. Then let the National Audubon Society's SOLAR BRIGADE know their name and address (SOLAR BRIGADE, Nat'l Audubon Soc., 700 Broadway, NY, Ny 10003, or by calling (212) 979-3000).

Registration is free and your name will not be sold to mailing list companies.

Audubon uses the number of participants to negotiate with utilities.

Bud McCafferty
Columbus, OH

■ More Copy. Fewer Ads

Just a note about your publication: this month you featured an advertising insert. What's next, blow-in cards that fall in your lap when the magazine is opened, full page cardboard inserts, pull-out postcard ads and more advertisements than substance? Time to nip this in the bud; we already allow ourselves to be deluged by advertising. One of the nice things about you is that you are still a 'homey' people (and bee)-oriented magazine.

Neal Esko
Walnut Creek, CA

Editor's Note: While I tend to agree with your opinion on the amount of advertising in general (it is increasing – on T.V., magazines, radio, billboards, busses, public bathroom stalls and shopping carts, to name some), our publisher's philosophy is that an ad must be of some positive benefit to our readers. Often, advertising is the only way consumers learn of a product's existence. Moreover, the ads in our magazine tend away from the sensational and favor the 'information deliverance' style. They are 'in good taste', and provide information regarding products you might otherwise not know about.

And, yes, someday one of those bothersome blow-in cards may drop out and it might be about some beekeeping product we feel strongly about – our magazine.

But we do offer more substance than ads. Look at a popular consumer magazine and count pages of copy and pages of ads. Generally, they run 40%-60% or so. Ours, at most, never run more than 35% advertising, and usually in the 30% range.

As an Editor my first choice is to have no ads, but as a business person I realize this isn't possible (your subscription price would more than double). So it is and (probably) so it shall remain.

NEW PRODUCT

Kärcher, the world's largest manufacturer of high-pressure cleaning equipment, introduces a full line of mid-range Cold-Hot-Steam High-Pressure Washers – the HDS 650, 750, 950 & 955.

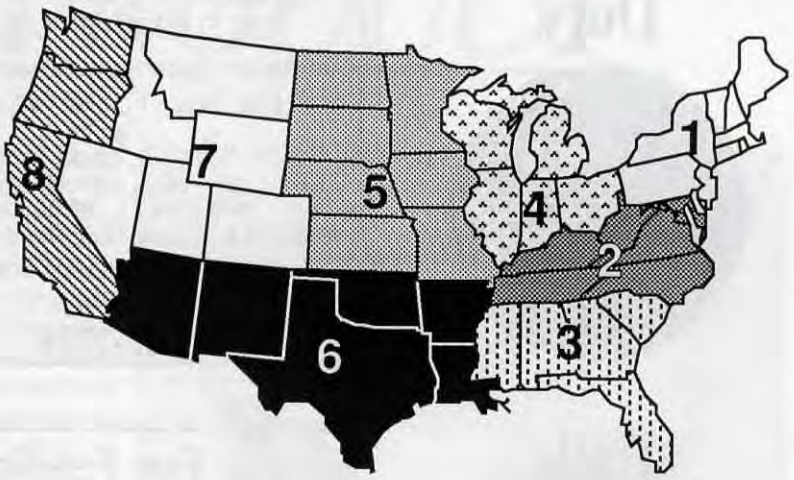
Each of these direct drive units are durably constructed of impact and corrosion resistant materials and incorporate a +90% fuel efficient burner system for maximum fuel savings. The HDS Mid-Range Series comes complete with many time and cost saving features (as standard) such as complete machine shut off at the trigger gun, infinitely variable water volume, operating pressure, temperature control and chemical metering.

Literature available from: Alfred Kärcher, Inc., P.O. Box 778, Browertown Road, West Paterson, NJ 07424, Tel: 201-890-0444, Fax: 201-890-9541.

SPECIFICATIONS:

	HDS 650	HDS 750	HDS 950	HDS 955
Water Volume (GPM):	1.3-2.4	1.8-3.5	1.8-3.5	1.8-3.2
Operating Pressure (PSI):	290-1000	290-2000	290-2000	450-3000
Temperature (°F/Steam):	86-285	86-285	86-285	86-285
Electrical Data (V/Ph/HP):	110/1/2.8	220/1/4.0	220/1/4.5	220/1/5.0
Weight (LBS):	260	290	290	290
Dimensions – LxWxH (IN):	50x27x29	50x27x30	50x27x30	50x27x30

AUGUST
Honey Report
August 1, 1993



REPORT FEATURES

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

	Reporting Regions								Summary		History	
	1	2	3	4	5	6	7	8			Last	Last
Extracted honey sold bulk to Packers or Processors									Range	Avg.	Month	Yr.
Wholesale Bulk												
60 #Light	46.90	45.50	42.99	43.99	40.20	42.10	42.74	41.40	31.20-54.00	43.76	41.96	45.40
60 # Amber	43.30	40.75	35.40	39.29	39.90	40.00	39.75	38.97	46.70-50.00	40.47	39.32	40.55
55 gal. Light	.590	.543	.488	.530	.524	.557	.535	.547	.48-.75	.536	.578	.610
55 gal. Amber	.538	.490	.457	.495	.510	.515	.504	.519	.42-.65	.508	.528	.559
Wholesale – Case Lots												
1/2 # 24's	20.59	23.63	19.50	20.50	23.46	20.19	21.84	18.40	16.32-24.00	21.18	20.28	23.56
1 # 24's	29.11	30.36	26.80	30.69	29.29	30.03	29.55	28.00	25.00-38.40	29.39	29.33	29.42
2 # 12's	25.88	28.77	28.82	29.42	28.20	25.48	28.04	29.66	26.75-36.00	27.32	26.91	28.04
12 oz. Bears 24's	26.02	27.47	26.85	26.44	23.78	25.50	26.72	22.74	21.00-33.60	25.94	25.45	27.60
5 # 6's	29.21	27.58	28.55	28.90	29.04	28.20	28.06	28.35	25.80-30.60	28.61	28.53	29.90
Retail Honey Prices												
1/2 #	1.17	1.47	1.04	1.41	.96	1.12	1.13	1.07	.82-2.25	1.16	1.15	1.15
12 oz. Plastic	1.45	1.62	1.82	1.61	1.44	1.44	1.52	1.59	1.24-2.25	1.54	1.51	1.53
1 #	1.65	1.79	1.95	1.82	1.76	1.64	1.78	1.59	1.40-2.50	1.73	1.76	1.77
2 #	3.05	3.15	3.08	3.07	2.90	2.97	3.00	3.42	2.45-3.89	3.05	3.03	2.96
3 #	3.89	4.40	4.37	4.33	4.19	3.96	4.29	4.49	3.50-5.25	4.24	4.32	4.11
4 #	5.27	5.41	5.50	5.55	6.00	4.95	5.43	5.15	4.95-6.25	5.28	5.25	5.15
5 #	6.99	6.37	5.90	6.69	6.71	5.89	5.18	6.14	5.30-8.75	6.41	6.45	6.60
1 # Cream	2.30	2.58	2.23	2.15	2.00	2.46	2.15	1.62	1.49-3.00	2.21	2.22	2.28
1 # Comb	2.74	2.49	2.85	2.89	3.49	3.21	3.21	3.15	2.00-3.75	2.93	2.99	3.11
Round Plastic	2.38	2.67	2.72	2.69	2.44	3.08	2.48	2.84	1.75-3.75	2.67	2.73	2.75
Wax (Light)	2.86	1.23	1.50	1.10	1.50	1.71	1.42	1.23	1.05-3.80	1.69	1.68	1.52
Wax (Dark)	1.74	1.14	1.23	1.10	1.41	1.27	1.15	1.12	.95-2.25	1.29	1.33	1.16
Poll. Fee/Col.	32.33	25.00	32.50	32.50	22.20	25.50	30.00	29.00	20.00-40.00	28.20	30.11	31.70

MARKET SHARE

The weather's the thing this month. Too wet in the midwest, too dry in the southeast and nearly right in the west. Imports haven't abated, reports of adulterated honey are being heard and now a reduced crop. Hey, what's going on here, anyway? Complaints about lack of country of origin on labels being heard from *every* quarter. Come on, packers – get with it!

Region 1

Sales steady but prices only holding their own. Demand steady to increasing a bit, but supply for this season questionable due to weather. Bears getting more numerous, bees less so.

Region 2

Prices steady to increasing because of increasing demand. Good early flows produced a healthy crop, but summer heat has slowed things. Colonies healthy, but feral colonies down.

Region 3

Sales and prices steady to increasing slightly, at least at retail. Bulk prices not strong. Crop generally average in amount with both hot and cold spots - good cities, fair palmetto. Moisture may be a real serious problem soon.

Region 4

Sales steady but prices barely holding their own. Since big packers aren't selling in high population regions they're moving into the less populated areas with lower prices. Locals having problems meeting price. Weather is a key - too dry, too wet or just right will determine the crop.

Region 5

Weather dominates. That and if your jars float maybe they'll sell if you can get to the bees that used to be where the river is now to get some honey. Sales aren't bad, all things considered, but prices aren't very strong. Outlook is damp.

Region 6

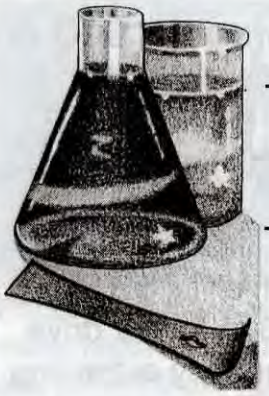
Retail sales holding their own with prices stable to weakening a bit. Wholesale another matter as large producers fighting imports and surplus crop from '92. Tales of adulterated honey (sugar syrup) are heard in the region more than last year.

Region 7

Although sales are steady and prices the same the big news is the bumper crop most areas are seeing. The weird weather that has the midwest wet, has left the region dry and sunny. Maybe too dry in some areas.

Region 8

Heavy competition from imports has hurt retail sales, and wholesale sales even more so. Nevertheless, demand is steady. Good crops in California signal some relief, but prices probably won't be appropriate variety sales will help, though.



RESEARCH REVIEW

roger morse cornell university ithaca ny

"Among other things, you can increase honey production by removing supers early."

Colonies with one-year-old queens produced more honey than did those with two-year-old queens (310 versus 225 pounds) according to the paper below. While this may be an old story it is a reminder that young queens are important. The tests were conducted in the Peace River District of Alberta, Canada where honey yields are much higher than in most beekeeping areas.

Removing ripe honey during the middle of the flow and again at the end versus removing the crop once at the end of the flow also stimulated honey production (313 versus 233 pounds). Colonies where honey was removed four times produced an intermediate amount.

A third part of this study questioned the value of additional space (supers). Colonies with more supers did not produce more honey. This contradicts some other research but it may be due to the local environment. However, adding additional supers did result in the production of honey with a lower moisture content.

Blueberries Benefit from Increased Pollination

Tests in Louisiana showed that increasing the number of honey bee visits to the blueberry variety "Gulfcoast" increases the number of seeds and fruit size and weight. An increased number of bee visits also shortened the fruit development time by as much as five days (from an average of 58 days to 53 days). Since getting the fruit to market early in the season may increase its price by 17 to 55 percent, even a few days are important.

Danka and his colleagues suggest that more seeds shorten the maturity time. Since blueberry seeds are small, an increased number of seeds has no adverse effect on the eating quality of the berry. Many blueberry varieties have as many as 50 to 75 seeds per berry. Each seed must be individually fertilized by the male germ plasm from a pollen grain. Multiple bee visits are needed to transport a sufficient number of pollen grains to the plant's female parts.

The acreage planted to highbush blueberries in the United States has increased more rapidly than that for any other temperate fruit in recent years. Blueberries are native American fruits that require pollination but some varieties do not always cross-pollinate with another variety.

Brood Nest Temperature and Queen Development

Experiments were undertaken with grafted queen cells to determine how their position in the brood nest affected their survival and emergence times. We know that the first queen to emerge in a colony kills her remaining, less well-developed sisters. This may be the reason Africanized queens tend to take over apiaries quickly since they develop in less time than queens from European stock and kill their competition.

It was learned that during the summer, 75% of emergency queen cells are located on the edge of the

brood nest while in the winter the cells are constructed in the center. In the spring and fall, the cells are constructed midway between these two positions.

In all trials, the temperature around the queen cells fluctuated less than the surrounding temperature. The temperature in the center of the brood nest is also higher and kept within closer limits. Queen cells kept in incubators, simulating the variations that may take place in brood nest temperatures, emerged in 15.9 to 18 days. This illustrates clearly that queen development time can vary and be controlled by temperature. This, in turn, may dictate who is queen of the hive.

References:

Szabo, T. I., P. Sporns and L. P. Lefkovitch *Effects of frequency of honey removal and empty comb space on honey quantity and quality.* Bee Science 2: 187-192. 1992.

Danka, R. G., G. A. Lang and C. L. Gupton *Honey bee visits and pollen source effects on fruiting of 'Gulfcoast' southern highbush blueberry.* Journal of Economic Entomology 86: 131-136. 1993.

Degrandi-Hoffman, G., M. Spivak and J. H. Martin. *Role of thermoregulation by nestmates on the development time of honey bee queens.* Annals of the Entomological Society of America 86: 164-172. 1993.

? DO YOU KNOW ?

Different Strokes

clarence collison

Some of us keep bees purely for the pleasure of enjoying one of nature's most fascinating creatures, while others are strictly in it to make a living. Those that keep bees for profit may specialize in pollination, while others often spend a lot of time and effort producing specialty products indirectly related to the hive. Whether you are a hobby, sideline or commercial beekeeper, it is important for you to gain an understanding of products other than liquid honey associated with the hive. Please take a few minutes and answer the following questions regarding products of the hive.

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

1. ___ Bees produce beeswax from a pair of wax glands on the ventral side of their abdomen.
2. ___ The dusty appearance that forms on beeswax is a mold that is easily wiped off.
3. ___ Beeswax candles burn slowly without smoking, have very little drip, produce a bright light and have a mild, sweet scent.
4. ___ The Dyce method is a technique used in making mead.
5. ___ Dark, non-table grade honeys are preferred over light honeys when making mead (honey wine).
6. ___ Honey wines made with darker honeys will naturally ferment more rapidly than those made with lighter honey.
7. ___ Beeswax must vaporize to burn.
8. ___ Beeswax shrinks when it cools from a liquid to solid.
9. ___ Comb honey exposed to high humidity will pick up moisture and ferment.

Multiple Choice Questions (1 point each)

10. ___ The ideal temperature for mead fermentation is:
    A) 70-75° F
    B) 75-80° F
    C) 80-85° F
    D) 65-70° F
    E) 55-60° F

11. ___ Meads normally contain approximately ____% alcohol.
    A) 6-10
    B) 10-12
    C) 18-24
    D) 24-30
    E) 40-45

12. What are two advantages of consuming finely crystallized honey over liquid honey ? (2 points).

13. Two products of the hive that are sold commercially in some parts of the world are propolis and royal jelly. Please indicate the origin of these two materials that are routinely found within the hive. (2 points)

14. Listed below are several ingredients and pieces of equipment often used in mead making. Please indicate their purpose. (6 points).
    A) Hydrometer
    B) Campden Tablets
    C) Fermentation Lock
    D) Betonite
    E) Ammonium Phosphate and Urea
    F) Yeast Culture

15. Two terms associated with making mead are "must" and "racking" Please indicate the meaning of these two terms. (2 points).

Please answer the following questions regarding hand dipping beeswax candles.

16. What is the probable cause of ripples on the side of the candles? (1 point)

17. What is the likely reason for air bubbles or white patches under the last coating of wax on a hand-dipped beeswax candle? (1 point)

ANSWERS ON PAGE 461

Some Basics In The Fine Art Of EXTRACTING HONEY

richard bonney

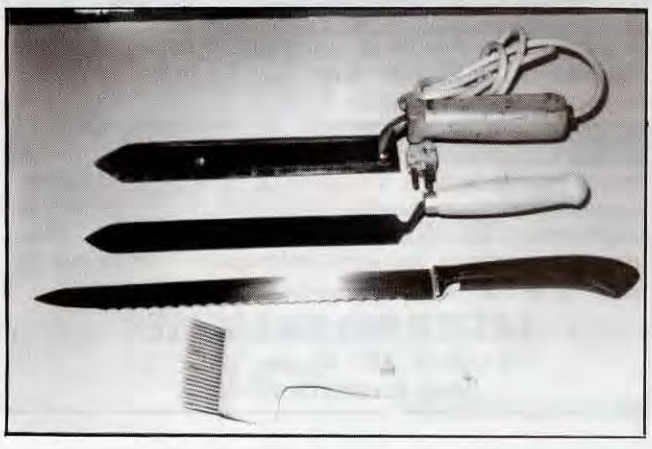
How do you look at extracting – a necessary chore, sticky, disruptive to family life, something to be done and gotten over with, or perhaps a pleasant and enjoyable culmination to a season's work? Your attitude no doubt stems from several factors. For instance, do you have an extractor, or must you seek one out each year? Do you have the other equipment – pails, uncapping knife, cappings tub, and the like – or do you try to make do? And how about the place to extract? Where do you do it?

The first couple of times I extracted honey, I did it in the kitchen. Later, having learned a thing or two, I moved to a space in the basement next to the laundry room. Eventually, in another house, in another life, I built an extracting room. I suspect that the majority of beekeepers, the small operators, use the kitchen. It has many of the requisites. To begin with, it's an area intended for food handling, with hot running water and easily cleaned surfaces and floor, always important when dealing with honey. There is always spillage of one kind or another.

The other thing I learned was to do the extracting at an off time – the middle of the night, for instance. You just can't sneak in between meals without totally disrupting the household. Extracting *always* takes a little longer than expected. And expect to spend a bit of time cleaning up. Honey is insidious. It leaves traces everywhere.

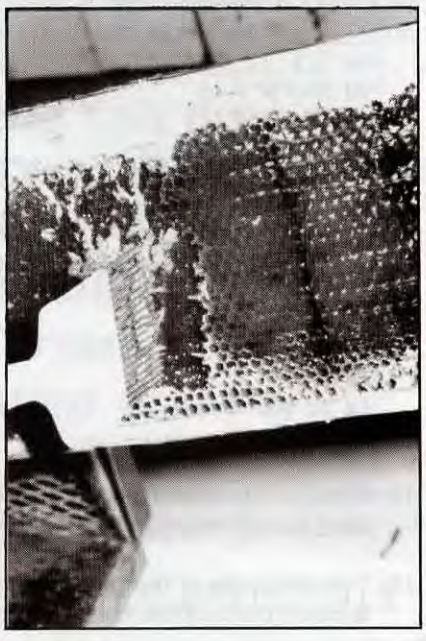
One of the questions I am asked just about every year is – "I don't have an extractor. Isn't there any other way to get honey from the comb?" Well, yes, there is at least one other way. It's not particularly efficient, though. Cut the comb from the frames, put it in a mesh bag, and hang it over a receptacle, a pail or a pot, in a warm room. Crush the contents of the bag, and massage the whole mess periodically. Over time much of the honey will drip out. The disadvantages to this method are obvious. You are limited in how much you can do at once, you must have a warmish room where you can hang this mass of stickiness for two or three days, and you will have destroyed the comb, requiring that the bees start with new foundation next season. I'm sure that you can think of other disadvantages. I said it wasn't efficient.

It all comes back to using an extractor. Even this has a drawback. A decent extractor is relatively expensive, especially for a piece of equipment likely to be used for



The tools of uncapping – from top to bottom – an electrically heated knife with built in heat adjustment, a plain uncapping knife, a carving knife from the kitchen, and a capping scratcher.

A capping scratcher dragged vertically across the low spots will remove those cappings that the knife passed over.



A six gallon pail with a 1-1/4" honey gate makes a good settling and bottling tank.

Food quality pails are often available at nominal cost from bakeries and donut shops. Here are four sizes - all useful - 3-1/2, 4, 5, and 6 gallon.

only two or three hours per year. There are alternatives to actually owning one. Some equipment dealers keep a rental unit on hand. Beekeeper associations might own an extractor for members' use. Another beekeeper in the neighborhood may have one he or she is willing to share. Occasionally, two or three beekeepers will buy an extractor cooperatively.

One way or another, you no doubt will gain access to an extractor. If it's your first time, there's other equipment to think about. As with any hobby or endeavor, you can spend a lot of money and get some very helpful tools or do surprisingly well with some less expensive materials.

What, specifically, do you need? Aside from the extractor, you should have several pails, a strainer, a knife, a cappings scratcher, an uncapping tank, and a bottling tank. Let's deal with these in order.

Pails are easy to come by. Your bee supply dealer probably stocks them, new, in the five-gallon size. They're even cheaper if you scout around for used ones. Bakeries or donut shops handle many pails of donut fillings and frostings, and are often anxious to have someone take the empties off their hands. The most common size in my experience, has been four gallons, a nice size for handling honey at home. Lately, I've been seeing two gallon pails as well. *Pails must be of food quality, and if used, never have contained anything except food.*

At some point in the extracting process you will want to strain your honey, to take out the wings and legs and coarse pieces of wax that inevitably find their way into the product. The simplest way is to use a kitchen strainer, the 6" or 8" diameter variety. These will fit nicely into the top of a four- or five-gallon pail.

Of course, before you strain, you must get the honey out of the frames, and the first step in doing that is to uncap. The two conventional choices of uncapping tool are the electric knife and electric plane. My preference is for the knife. I have used an uncapping plane but I find it heavy and unwieldy, although some beekeepers would not use anything else. Electric knives and planes are relatively expensive, though. For a small operator, a large, non-electric kitchen knife will do the job. I especially like the scallop-edged carving or bread knife, but ordinary edges will work, too, especially if the blade is kept immersed in hot water when not actually in use. Having two works well – one, warming in hot water, while the other is being used.

The cappings scratcher is a necessity. Often the bees will draw out new comb irregularly, with some of the cappings below the surrounding level. The knife will skip over these depressed areas: the cappings scratcher takes care of them. It may be used horizontally, slipped under the cappings and lifted, or vertically, dragged across the cappings to break them up. No other tool does the job as well.

The uncapping tank or tub is important if you want to recover all of your honey. In the uncapping process significant amounts of honey of excellent quality will adhere to the cappings. Given time and a proper container, that honey can be drained off. The simplest arrangement is a kitchen colander set into the top of a pail. The holes of a colander are large but it will strain out the worst of the debris. Subsequent skimming or filtering will get the rest. The drawback with any uncapping setup is capacity. At some point the strainer gets full. A colander fills quickly. The cappings must drain (stir them around periodically to hasten the process), for at least twenty-four hours. If you have more than a few frames, a strainer with larger capacity is desirable. You can buy a cappings tank at moderate cost but consider making your own. A rectangular plastic tub with a honey gate at the lowest point and a queen excluder in the bottom to act as a strainer will do the job. If the tub is large enough to use a queen excluder as the strainer, it's large enough to hold

Make sure any used pails you pick up have been used *only* for food.

Continued on Next Page

This tangential style extractor will hold either three deep or six shallow frames. The crank on top can be removed and replaced by a variable speed drill.

This kitchen strainer fits nicely in any size pail. It is effective in removing the coarser particles of wax, propolis, and other hive debris.

EXTRACTING ... Cont. From Pg. 427

several supers' worth of cappings.

Once extracting is complete and the honey clean and settled, you bottle it. It is difficult to dip or pour honey from a large container into a small one so a bottling tank will make life much easier. You can buy one, but you can also make one very easily. A plastic pail and a honey gate are all it takes. Cut a hole close to the bottom of the pail, put in the gate, screw it tight, and you're done. It doesn't take any special tools. A hole-saw works well but I have cut the hole with a sharp jackknife.

Cleaning up after extracting honey can be a real mess. Try *not* to leave your equipment messy too long. Honey sets like concrete.

The extracting process itself is straightforward. Assemble your equipment and honey supers. For ease of handling, the honey should be at warm room temperature or better. Cold honey is harder to uncap, harder to extract, and it does not flow readily through strainers and filter cloths. Twenty-four hours or more in a warm room helps immensely. Remember, though, now that you have the supers in the house – they will drip. ***It's guaranteed.*** Keep something under them, both the full ones and the empty ones. A spare telescoping lid makes a handy tray for a stack of supers.

Uncap the frames and place them in the extractor. All frames are not necessarily equal in weight. Pick and choose the frames for each individual load to keep the basket balanced. An unbalanced extractor will try to walk around the room unless you fasten it down. Since you are working on a small scale, your extractor probably will be a tangential model, one in which the frames are placed in the extractor in a position *tangent* to the circular path of the revolving basket. In this arrangement, honey is removed from only one side of a frame at a time. New comb that has just been drawn out by the bees in the current season may be a bit tender. It could break in the extractor due to the pressure. To ease this problem, as you begin spinning, and as the honey comes out, try to estimate when half the honey has been removed from the first side of the frames. Then, reverse the frames. Lift them out, turn them around, and replace them. Then extract *all* the honey from the second side. Reverse them again and finish extracting the first side. There is a little extra work involved here but it helps to keep the weight of the honey on the second side from pushing through to break the comb as you extract the first.

If you are working with a *radial* extractor you will not have this need to reverse the frames. In a radial, honey is removed from both sides of the frames at the same time. The load can be out of balance, though, so the same care applies here. No matter what extractor you're using, if you are approaching the end of the job and don't have enough full frames to completely fill the extractor on the last run, use empty frames to help maintain that balance.

As you allow the honey to drain from the extractor into a pail, you have a choice. Strain now, or strain later, or don't strain at all. If you run the honey through the strainer at this point, it is done and over with. However, this may slow down the process since you must keep an eye on the strainer to see that it doesn't become clogged and nothing oveflows. It's a distraction you don't need if you are working alone. Instead, run the honey directly from the extractor into pails and set them aside until later. When the extracting is done, then strain. Another option is to leave these pails of unstrained honey in a warm room for a couple of days. You will find that most of the debris – those pieces of bees and wax – will have risen to the top. Skim it off. Then use a fine mesh filter cloth rather than a strainer and your honey will be ready to put in

bottles or to put into pails for storage.

Many beekeepers do bottle their honey as an immediate extension of the extracting process. That is, they do not have any appreciable time delay between the two operations. If you do strain and filter your honey as it comes from the extractor, consider delaying the bottling for a few days, again leaving the pails in a warm room. Air bubbles are inevitably added to the honey in the overall extracting process. A delay gives time for these bubbles to rise to the top of the pail and dissipates. Otherwise, they may end up as foam on top of the honey in each jar. Settling is an especially good practice if you plan to enter the honey in competition. By the way, competition honey should not be strained through cheesecloth. This material can add minute strands of lint to the honey. You may not see the lint but the judge will detect it with a polariscope. Nylon, 70-mesh or finer, makes a much better filter cloth.

When you're all done, there's still one chore left – cleaning your equipment. The extractor especially can be a challenge, depending on the facilities available. Rather than hosing it down with cold water, *put it in the shower.* Now that was quick and easy, wasn't it?

THE WEEKENDER

jeff ott

A Taste Of Mead

Do friends and family cringe when you approach them holding a jar of honey? Have you and your neighbors tried every recipe the National Honey Board has published? At some point you may come to realize that your bees are making more honey than you can give away.

Sure, you're proud of your honey; it's the end result of your hard labor and your bees' lives. Yet you have a surplus. What if you could create something unique with honey – something your friends and neighbors haven't tried? The answer may be in a honey product which has been around for thousands of years. It's called mead.

Mead is popular in both historical legend and fact. English lore suggests that mead was Robin Hood's favorite beverage and that it was served to the knights at the fabled round table. There are tales of Vikings celebrating victory by drinking mead from the skulls of their enemies.

In addition to the legends, archaeologists have found proof that mead has been around for over five thousand years. The ancient Egyptians are known to have enjoyed mead and the ancient Babylonians served it as the official drink at weddings. A Babylonian bride's parents were required to keep the new couple supplied with mead for a lunar month following the wedding – the word "honeymoon" comes from this.

What is mead? In its most primitive form, mead, or honey wine, is made from the fermentation of honey diluted in water. Yeasts break down the sugars and the natural byproducts are ethyl alcohol and carbon dioxide. That's the simple description. It can get more involved.

Long ago mead was made without knowledge of yeast, fermentation or even sanitation. Maybe that's why the early meads were heavily spiced – to cover up the unpleasant odors and tastes caused by incomplete fermentation or bacteria that grew in the mixture. Luckily, late in the 1800s, the importance of yeasts and the process of fermentation was discovered.

Suzanne Price of the American Mead Association offers a taste of a commercially made mead ale.

Yeasts are simple single-celled organisms found everywhere in the environment. Early mead makers had no idea that yeasts even existed. Ultimately it was the chance "wild" yeasts floating in the air or laying around in the meadery that would determine the quality of the mead (or how much spice was added to it).

What does today's homebrewer need to produce mead? It may take less money and equipment than you think. In addition to yeast supplies, you will need the following four basic pieces of equipment to make a palatable mead.

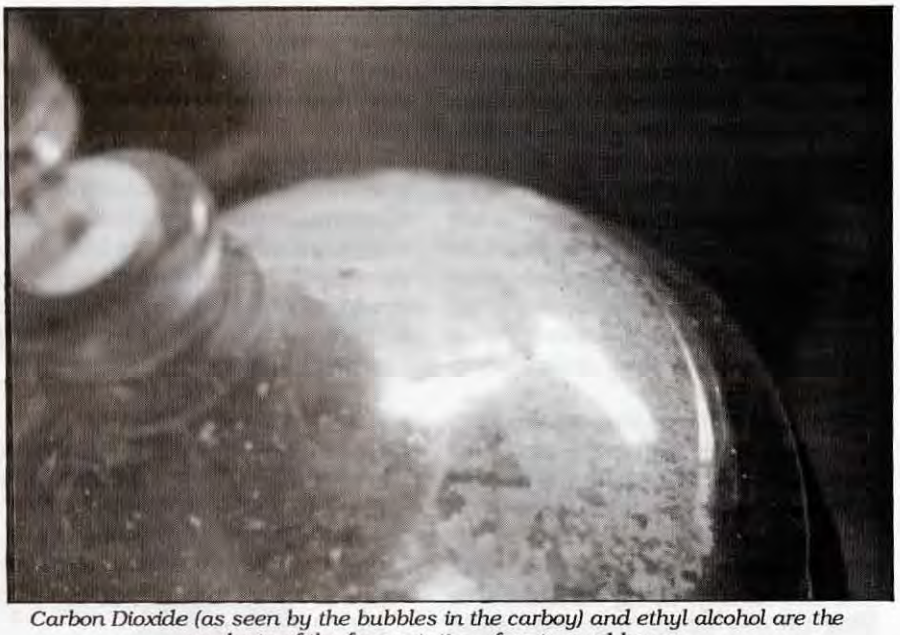
Brewing Pot – The brewing pot is used to mix the honey and water and bring the mixture (or "must") to a boil. The pot can be a large kettle like the one home canners use. Make it stainless steel to avoid corrosion from the acids in honey. The brew pot should be thoroughly cleaned before each use with a bleach solution or a "washing soda", which is available through homebrewer suppliers. Any residue from the cleaning agent may harm the mead so all equipment must be completely rinsed.

Carboy – This is the sealable container in which the fermentation process takes place. The most common carboys are five-gallon glass jugs. Some mead makers like to use wooden casks or barrels, but the glass jugs are recommended.

Fermentation Valve – The fermentation valve is sized for the opening of the carboy. This simple valve is used to allow carbon dioxide to escape but prevent the contamination of the *must* by "wild" yeasts or other contaminants. It can be as simple as a plug of sterile cotton or a store-bought valve made of glass passed through a rubber stopper.

Siphon – The siphon is used to take the mead out of the carboy and into another carboy or bottle.

Carboys with fermenting mead in a darkened room. Note the glass fermentation valves.



Carbon Dioxide (as seen by the bubbles in the carboy) and ethyl alcohol are the products of the fermentation of water and honey.

You will also need the following supplies:

Yeast – Due to a better understanding of the fermentation process, cultivated yeasts have been developed specifically for brewing wines, beers, ales, breads and other products. For starters, try Montrachet, a good quality general purpose wine yeast. As you gain experience, you can experiment with different types of yeasts.

You do not simply add the yeast to the mix. You must first prepare what is called a yeast starter. A yeast starter can be made by putting the yeast in about a cup of 100% apple juice and sealing the small flask or jar with sterile cotton. In three or four days this mixture will ferment, bubbles and foam will form and it will be ready to be used as the starter.

Yeast Nutrients – Yeasts cannot live on honey alone. While yeasts feed on sugars in the honey and water mixture, they need other minerals and nutrients to insure completion of the fermentation process. Yeast nutrients are available wherever you purchased your other homebrewing supplies.

Acid Blends – Acid blends help insure the proper pH (pH is a measure of how 'acid' the mix is) of the must to optimize the environment of the growing yeast. The pH also affects the oxidation rate, aging rate, and protein stability of the must. Monitoring the pH will become more critical as your palate becomes more discriminating in your tastes. Initially, use the amount of acid blend recommended in the directions.

Bottles ,Caps and Corks – The final step of mead preparation is bottling the mead. The bottles can be recycled wine bottles that have been properly cleansed and sterilized. You can use bottle caps or what most mead and wine makers prefer – corks. Special presses are available to insert corks or bottle caps on your choice of bottles.

Honey – The color and flavor of the honey you use will determine the final color and flavor of the mead. Generally, a darker honey will produce a darker mead. A lighter honey will produce a lighter mead. Along those same lines, a stronger flavored honey will produce a stronger tasting mead. The lighter, milder-flavored honeys will produce what is considered a "bland" tasting mead.

Use your best honey when making mead. If you use a Brand melter for your cappings, don't use the honey that is left after the separation of the honey from the cappings. Brand melters have a tendency to burn the honey and adversely affect the taste. Otherwise, cappings honey is good.

Some mead makers don't bother separating the wax, brood or bees out of the cappings honey and say the resulting mead is even better. Well, taste *is* a personal choice, but your friends and relatives may not like the idea of drinking the fermented juices of dead bees and bee larva.

Remember that honey's greatest value in the public's mind is its purity and wholesomeness. Keep this in mind in determining which honey to use in your mead making.

Making Mead

There are many mead recipes. Your choice of recipe depends on the desired flavor for the final product. The following is a basic mead recipe borrowed from Roger Morse's book, *Making Mead.*

Ingredients:

3.5 pounds of honey

1 gallon of water (Use natural spring or other soft unchlorinated and unfloridated water)

2 teaspoons ammonium phosphate

1 teaspoon cream of tartar

1 teaspoon of acid blend

(The ammonium phosphate, cream of tartar and acid blend can be replaced by the appropriate amount of commercially available yeast nutrient and acid blend.)

Mix the honey and water in the brewing pot, and let it boil for 10 to 20 minutes. Boiling removes most of the solids present, helping to produce a clear mead.

Remove the mix from the heat and when it is warm (not hot) add the nutrients and acid blend. While the must is still warm, pour it into the carboy and put your fermentation valve in place to keep unwanted "wild" yeasts or other contaminants from

Continued on Next Page

MEAD ... Cont. From 431

taking hold.

After the mix has cooled completely, add the yeast starter. Ideally, the carboy should be placed in a darkened room where the temperature can be maintained between 65° to 68°F. Lower temperatures are okay, but below 50°, the yeast cells become inactive and the fermentation will stop. Temperatures higher than 75° will cause off flavors, colors and may even kill the yeasts.

Keep the mead in this carboy until the fermentation stops, noted by the inactivity in the fermentation valve or foam in the carboy, usually in about three weeks.

Siphon off the clear must into another carboy, being careful not to pick up any of the material (called "lees") that has settled to the bottom of the carboy. While siphoning, try not to introduce air to newly fermented mead in the second carboy. This second carboy begins the aging process.

During aging, repeat the siphoning process two or three more times at three-month intervals to insure a clear product. After about a year, the mead should be bottled and left to age longer. The right time to drink the mead is really a matter of taste. You may want to drink it after the first fermentation.

Mead making is an art and takes time to master. If you are interested in making mead contact the sources listed below for more information. The recipe you use for your mead is limited only by your own imagination. You can add anything to the mix, such as hops, spices, fruits and flowers. You can even make a sparkling mead or "mead champagne" Experiment and let your taste be your guide.

Unless you want to address the governmental regulations concerning the manufacture and sale of alcoholic beverages, you will not be able to sell your mead. But you can make a quality drink with your very own honey and enjoy it with your friends, family and neighbors!

Reading References:

Gayre, Lt. Col. R. *Brewing Mead* Brewers Publications, Association of Brewers, Boulder, CO $11.95

Morse, R.A., *Making Mead (Honey Wine)* BES & Wicwas Press, P.O. Box 817, Cheshire, CT 06410 (203) 250-7575. $10.95

Supplies: (Kits, Books, Videos and Equipment)

Brushy Mountain Bee Farm, Inc.
Rt. 1, Box 135
Moravian Falls, NC 28654
(800) 233-7929

Green Mountain Meadery
830 35th St.
Boulder, CO 80303
(303) 442-9111

Associations:

American Mead Association
P.O. Box 17511
Boulder, CO 80308

Association of Brewers
P.O. Box 1679
Boulder, CO 80306

USING HONEY VINEGAR

elaine c. white

In the late 1800s manufacturers learned to make acetic acid. They added water to reduce its strength to 5%, colored it and sold it as vinegar. Imitation vinegar is still manufactured and by law the label should state that it is *diluted* acetic acid. It is inexpensive and lacks the vitamins, minerals and esters found in fermented vinegar. Imitation vinegar is also inferior in taste and flavor.

It takes good alcohol (wine or beer) to make good vinegar. The "hit or miss" method of making vinegar by allowing honey and water to ferment is not wise. Chances of failure or undesirable tastes and aromas are high. You can control the process by practicing cleanliness and introducing selected yeast and bacteria to obtain quality vinegar every time.

General Directions

Winemaking supplies list *acetobacter* as vinegar culture or "mother" These cultures convert alcohol to acetic acid. Most suppliers sell red and white wine vinegar cultures. A few sell cider, malt and mead cultures as well.

Any culture may be combined with any type of alcohol to produce vinegar.

Vinegar should contain at least 5% acid as required for preserving or pickling. Specialty vinegar contains acid as high as 7%. Beer containing 5-1/2% alcohol will yield about 5% acid. Wine containing 11 to 12% alcohol must be diluted to 5 - 7% alcohol before using it to make vinegar.

Acid test kits, sold by winemaking suppliers, are used to determine the acidity of vinegar. Acid tests are easy to perform and instructions come with the kits.

Sanitize

Sanitize utensils and containers that will touch the vinegar by soaking them for 15 minutes in a solution of one tablespoon of household bleach to one gallon of water. Rinse everything in hot tap water.

Vinegar Method I

3 measures beer, ale or vinegar stock (5-1/2 to 7% alcohol)
1 measure vinegar culture with active bacteria

Directions: Mix the ingredients in a sanitized stainless steel, glass or stoneware container that will hold twice the volume of your original mix. Cover the container with a cloth or stopper it with cotton to keep insects out, while allowing air to freely reach the stock. Store the mixture in a dark place. Temperatures between 80° and 85°F are ideal. Low or fluctuating temperatures slow the process. At 75° to 85°F, it will take four to six months for conversion. 85° to 90°F, it will take two to three months. Temperatures over 95°F slows conversion and above 140°F the bacteria die.

An acetic film called "mother" will form. This smooth, leathery, grayish film becomes quite thick and heavy. It should not be disturbed. It often becomes heavy enough to fall and is succeeded by another formation. If the mother falls, remove and discard it. An acid test will indicate when the alcohol is converted to vinegar. Part of the vinegar may be withdrawn and pasteurized. The remaining vinegar may be used as a culture to start another batch. Living bacteria are in the liquid. A piece of the mother is not necessary to start a new batch.

Add beer or diluted wine to the culture when most of the alcohol is converted to vinegar, every three to six months depending on the temperature that is maintained. Adding more alcohol to the culture keeps it alive, prevents spoilage and increases the quantity of vinegar. If unpasteurized vinegar is exposed to oxygen without alcohol present, bacteria convert the vinegar to carbon dioxide and water.

Vinegar Method II

2 measures dry wine (11 to 12% alcohol)
1 measure water
1 measure vinegar culture with active bacteria

Continued on Next Page

This is what 'mother' looks like when it forms on top of your vinegar. It is perfectly natural.

VINEGAR ... Cont. From Pg. 433

Follow the directions in Method I. Purchased wine can be used, but some commercial wines contain sulfites or preservatives that could kill the vinegar bacteria.

Vinegar Method III

For Winemakers Only

Mead Stock for Vinegar
1-1/2 pounds honey or specific gravity reading of 1.050
2 teaspoons yeast nutrient or energizer
4 teaspoons acid blend or 7.5 p.p.t. tartaric with an acid test kit
1/4 teaspoon tannin
Wine yeast
Water to equal 1 gallon

Mead containing less than 10% alcohol is subject to spoilage. This mead formula with 7% alcohol is an ideal vinegar stock. Follow good winemaking procedures. When the fermentation is complete (specific gravity 1.000 or below) this low-alcohol mead is converted to vinegar as directed in Method I.

Home Made Wine

Dry mead containing 11 to 12% alcohol can be diluted after fermentation (specific gravity 1.000 or below). It does not have to be clear as this is accomplished when the vinegar is aged. At the last racking, do not add campden tablets or potassium sorbate. Dilute the mead as directed in Method II and follow the directions in Method I.

Preserving Vinegar

Pasteurized or sulphited vinegar can no longer produce more vinegar. Pasteurizing kills vinegar bacteria and prevents the formation of "mother" that could lead to spoilage. Pasteurized vinegar keeps indefinitely when tightly capped and stored in a dark place at room temperature. Temperatures above 160°F cause a loss of acidity, flavor and aroma.

To Preserve Vinegar

Add two campden tablets per gallon of vinegar. Campden tablets are sold by wine making suppliers OR heat the vinegar to 150°F and hold that temperature for 30 minutes.

After pasteurizing vinegar, add one teaspoon 80-proof vodka to each gallon and age it. If desired, up to one cup of oak or beech chips may also be added to enhance the bouquet.

Aging Vinegar

Vinegar has a strong, sharp bite at first, but becomes mellow when aged. The esters formed during aging, like those in wine, develop after a period of six months or more when stored at a cool, steady temperature (50° to 60°F is ideal). This undisturbed rest also allows suspended solids to settle, leaving the vinegar clear and bright. Siphon the clear, aged vinegar off the deposit of solids into sanitized bottles. Introduce as little oxygen as possible. Winemaking suppliers sell attractive vinegar bottles. Use corks or plastic caps to avoid contact with metal. If corks are used, the necks of the vinegar bottles should be dipped several times into melted wax to form an air-tight seal.

Using Vinegar

Aluminum Discoloration

Remove dark stains on aluminum by boiling the item in a solution of 1/4 cup vinegar to one quart water.

Caramel Food Coloring

Only a few drops are required to color food items such as frosting, vinegar or soft drink. Depending on the amount used, the coloring ranges from golden yellow to dark brown.
1 tablespoon honey
2 tablespoon water
2 tablespoons 100-proof vodka

Place the honey in a clear, heat-proof container that will hold at least two cups. Microwave on high for about three minutes. The honey bubbles and blackens. Add water to the honey. Microwave 30 seconds and stir. Strain the mixture through a coffee filter or a paper towel. Bottle the coloring, add the vodka and shake well.

Cheese Preservative

Moisten paper towels with vinegar and wrap them around cheese. Seal this in a plastic bag and store it in the refrigerator. Moisten the towels as necessary. The vinegar does not affect the taste of the cheese while it prevents mold and keeps the cheese from hardening and drying.

Dried Herb or Dried Spice Vinegar

1 quart vinegar
2 to 3 tablespoons dried herbs or spices

Heat the spices and vinegar to 160°F in a stainless steel or glass pan. Bottle the vinegar and let it cool. No aging is necessary, but if a stronger flavor is desired, age up to one month. Strain out the herbs or spices and allow the liquid to stand for a few days. Siphon the clear vinegar into sanitized bottles.

Ebony-Colored Wood Stain
This formula blackens wood that contains tannin (oak, cherry, walnut or mahogany).
1 #4/0 steel wool pad
2 cups vinegar

Place the ingredients in a glass jar and let them set for several days or until the steel wool dissolves. To use, sponge the solution evenly onto a sanded wood surface. Allow it to dry overnight before applying a finish.

Fabric Softener
Add 1/2 cup vinegar to the washing machine's fabric softener dispenser. Vinegar removes yellowing soap scum, making blankets and woolens soft and fluffy.

Fragrant Toilet Vinegar
A mixture of half vinegar and half water has many cosmetic uses. It is a stimulant, astringent and cooling agent to the skin. When used as a rinse, it makes hair shine by removing soap residue. A cup of this mixture in a hot bath softens skin. When used as a cool compress, it eases headaches and relives tension. The acid in vinegar readily dissolves and holds fragrances.

2 cups fresh flowers or herbs or small amounts of ground spices or essential oils
1 tablespoon vodka
Food coloring (optional)

Place the vodka and fragrant material in a quart jar and fill the jar with vinegar. Seal and age it for three weeks in a warm, dark place. Strain out the solids, squeezing the scent material. Allow a few days for the liquid to clear. Siphon off the clear vinegar. Boil an equal amount of water and let it cool. Add the water to the fragrant vinegar.

Fresh Fruit or Herb Vinegar
1 quart vinegar
1/4 cup ripe fruit or fresh herbs

Wash, drain and crush the fruit. Combine the ingredients and heat them to 160°F in a glass or stainless steel pan. Bottle and seal the warm vinegar. Age it for one month in a warm, dark place. Strain it, wait for the solids to settle and siphon the clear vinegar into sanitized bottles.

Meat Tenderizer
Marinades containing vinegar are effective meat tenderizers.

Slug Killer
1 measure vinegar
1 measure water

Put the ingredients into a sprayer. Go into the garden after dark and spray the slugs, plants and ground. The slugs die almost instantly.

Thirst Quencher
This sweet-tart drink is one of the best thirst-quenchers around.
1 tablespoon honey
1 tablespoon vinegar
1-1/2 cups carbonated water.

Combine the ingredients and serve cold.

Vegetable Vinegar
Choose *one* of the following:
- 8 garlic cloves, peeled and crushed
- 1 pound green onions, chopped
- 1 pound sweet peppers, seeded and chopped
- 3 hot peppers, seeded and chopped
- 1 pound sweet onions, peeled and chopped
- 1 cup celery leaves, chopped
- 1/2 ounce (weight) celery seed

Combine the chosen ingredient with one quart of vinegar containing 7% acetic acid. Heat this to 160°F. Bottle the warm vinegar and age it for one month in a warm, dark place. Strain out the solids and allow the liquid to stand for a few days. Siphon or pour the clear vinegar into sanitized bottles

Window Cleaner
3/4 cup household ammonia
1/4 cup vinegar
3 cups water

Pour the ingredients into a spray bottle and shake well. Spray the window and wipe it clean.

Elaine White is the author of *Super Formulas Arts & Crafts*, Published by Valley Hills Press

BUSINESS • PROFILE

MANN LAKE SUPPLY

kim flottum

From tiny Hackensack comes a giant in the Beekeeping Supply Business

In 1972 Jack and Betty Thomas headed north from Minneapolis to a summer cabin on Mann Lake, just outside the north-central town of Hackensack, Minnesota. Jack had just sold an engineering business and Betty left a career in psychology, and the slower pace seemed attractive. Surrounded by hundreds of lakes and thousands of acres of standing forest this seemed the perfect place to 'get away' from the hectic life they had left in the big city.

They soon planted a garden, and because Betty's family had kept bees, knew some were needed for pollination. So they started a few colonies with equipment her family had once used. Honey was a natural by-product and because of the steadily increasing tourist trade, they started selling not only honey, but wild rice and maple syrup out of their house.

Sensing a growing market they began investigating the potential of expanding their grass roots business and, as part of their quest began attending the meetings of a local beekeeping association. And another opportunity quickly became apparent – there were no local outlets for beekeeping equipment.

But they needed a source of supplies to resell, and a trip to Kelley's and Dadant's gave them that source. So beekeeping equipment was added to the list of merchandise sold out of their home. To compliment these sales they attended other association meetings in the area, both to learn more of the craft and to give their fledgling business more exposure. Mann Lake Supply was on its way.

The business grew steadily, both by word of mouth and direct contact with beekeepers. Hackensack is located centrally in some of the best beekeeping country in the U.S. The Dakota's are just to the west and the best parts of Minnesota and Wisconsin aren't far south and east.

This direct contact with many commercial beekeepers slowly brought about an understanding of the business and economics of keeping bees on a large scale. They had been exposed, first hand, to the real world of making money making honey.

These contacts brought to light several areas they felt could stand improvement.

"The beekeeping industry wasn't competitive", said Jack. "Not so much with each other but with increasing labor costs (efficiency) and decreasing prices for their crops (profitability). There were some inherent problems I saw that needed to be solved", he added.

Although they attended the 1984 Federation meeting as observers they began making contacts on a national level on a regular basis. And, reinforced by harsh winters in Minnesota and comments from beekeepers all over the north, Mann Lake Supply introduced their first new product in 1985 – a plastic winter wrap that could be left on during spring feeding with few of the animal or U.V. problems other products had. That same year they attended the Minnesota State Beekeeper's meeting as a business. They had taken their first major step out of Hackensack.

Jack Thomas, the new product specialist.

Although the outward signs were just beginning to be noticed on a national scale in 1986, Mann Lake had already set their business goals and philosophy, determined primarily by their contacts with commercial beekeepers.

"We decided that to solve some of the problems beekeepers were facing, and weren't being met by other industry organizations, we needed to specialize, to focus on feeding and medicating honey bees" Jack said.

To that end, several improved or new products were already in the pipeline. And all had one thing in common.

"We didn't reinvent the wheel everytime we looked at something", Jack said, "which made life simpler, and development much less expensive."

At the time, most beekeepers were using Terramycin 50™ for foulbrood control, but it was a less than effective product. It had a rice hull base and was often discarded by the bees. But TM 50D™, another formulation with a sugar base worked just fine and was already on the market as a milk replacer for other animals.

"Getting the label was pretty easy, actually" said Jack, "a group of us

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MANN LAKE ... Cont. From Pg. 437

petitioned the USDA and helped with the paper work and it went pretty smooth" he said.

TM 50D™ wasn't a 'new' product, but now it was legal, and available at affordable prices for any size operation.

Another product introduced in '86 was Honey Robber®, an odor enhanced form of Bee Go™.

"We took two existing technologies, the basic Bee Go™ formula which was available, and information from odor control specialists and came up with a product that moved bees out of supers as well as Bee Go™, but without the obnoxious smell. We didn't reinvent the wheel, we just made it better", Thomas said.

Mann Lake made several other strategic moves that year, too. They finally moved the business from their house to a 165' x 50' warehouse in town. They remodeled it into storage, shipping and office facilities. They had one part time employee, Jack handled purchasing, sales and the phones, while Betty took care of shipping and advertising. She was also beginning to handle her line of jewelry and gift items.

In 1987 the warehouse grew by five thousand square feet with the addition of a cold storage section to accommodate the large quantities of supplies being purchased. Another small, separate building was added later to house bulk menthol crystals and Honey Robber®. Still another 8,000 square foot addition to the main warehouse is planned for next year for a total of over 20,000 square feet of storage, shipping and office space. They also have satellite warehouses in Sioux Falls, South Dakota, Yakima, Washington and Turlock, California.

The business focus became even more fine tuned over the next few years, as Mann Lake made an even greater effort to concentrate on consumables.

Research on Bee-Pro™ began in 1987, because commercial beekeepers needed a stimulant to feed in early spring for pollination buildup Developed with the almond crop pollinators in mind Mann Lake set out to feed a colony organism, not individual honey bees. Working with an animal nutrition company they developed a formula with enough nutrients and electrolytes to properly feed an entire

Betty Thomas has specialized in the new and unusual in gifts and jewelry.

colony. Based on expeller processed soy flour, the process took three years to perfect. It came to market in 1990 and has worked well for its intended purpose.

Producing the prepackaged Terramycin™ pattie had several manufacturing problems to solve before it worked on a commercial basis. Mixing the sugar and TM powder was difficult because of differences in particle size. Once a uniform mix was obtained, getting it distributed uniformly in a vegetable shortening base proved equally difficult.

The final product, whose formulation technique is carefully guarded, is a one time 1,000 microgram dose of Terra in a patty that has an almost infinite shelf life. This one dose application, once opened is viable for several months in a hive.

Since 1986 Mann Lake has introduced or obtained several other products. Working with the American Honey Producers they have an exclusive label for menthol pellets, packaged in individual 50 gram packets or in bulk. They've also introduced a queen excluder scientifically produced for exact spacing. Excluder producers are few and far between so a new manufacturer was found.

Product purchases also added to the line over the years. Mann Lake has purchased Rite Way Queen Shippers, and has plans of customizing the unit for specific queen producers. Frame lug repair units were also obtained from the original producer.

Another product recently developed has been the plastic inhive feeder. Tested with commercial outfits it has solved some of the problems other feeders express. Stronger, larger and with a splash guard, it keeps water off the top of syrup, which keeps bees feeding.

A new bear mold was developed, complete with a different type cap and tamper proof seal. These, coupled with the five and six pound jugs for yard rent round out their container line.

But handling regular glass has had its problems. The door of the original warehouse facility was not large enough to accommodate the back end of a semi because the load was too high. To unload, the top few layers had to be moved by hand, one at a time. Not-so-fond memories of hot afternoons.

Having a solid handle on the consumable market also means being a player in the corn syrup business. And Mann Lake has made their mark there, too. Contracting with a major commodity company they arrange delivery of tank loads of syrup nearly anywhere in the country, guaranteeing delivery time to keep labor expenses to a minimum for beekeepers.

During this time they have not forgotten their start. They have taken the back door sales of maple syrup and transformed it into a major supply business for that cottage industry. They supply everything for the syrup business – whether the two-gallon-a-year back yard producer or the tanker sized operation in forest-sized sugar bushes. Sound familiar?

While building up their consumable trade Mann Lake continued to purchase and resell other supplies for the beekeeping business. Primary among these was wooden equipment. But in 1992 they decided to change that.

Purchasing equipment from the Root Company and others they set up a woodworking shop and began manufacturing supers, frames and other wooden equipment.

Not without a few problems, however. Reworking the old equipment, designing the shop and warehouse and establishing sources of wood all took time. And, once setup, producing a consistent quality product in large enough quantities to keep unit prices low enough for the commercial trade took even more time.

But in fits and starts the busi-

ness has established itself in what is probably the most competitive portion of the industry – major competitors, a huge used equipment supply and a decreasing number of purchasers. The riskiest gamble of Mann Lake business is still taking shape.

Another visible move in 1992 occurred when a full line catalog was published and distributed. Sent out in bunches rather than enmass to the total mailing list, the book has done much to solidify their position in the industry, especially in the area of mid-size and small operations.

"We are expanding into that area now that we have the supplies these operations need", said Stewart Volbey, Sales Manager for Mann Lake.

Which brings up the final part of the business to be examined – the people who run it.

Stewart has been around the operation for awhile and offers some insight to what makes the company work.

"For any business to succeed", Volbey says, "you need two very important things – service and good products. I think our products speak for themselves, but service is where we really shine", he said.

Stewart wears several hats – sales manager, which includes catalog production and phone contacts. But he also keeps the computer system running – shipping, sales, accounting, advertising, personnel, and all the rest.

Along with being office manager, Nancy Ehlers spends lots of time on the phone taking orders, answering questions and solving problems. She, too, wears several hats and tends to keep everyone focused when the season, sales and phone get hectic. That role has won her the unofficial title of office 'mom' by the rest. And though she shys away from both the camera and comment, close observation shows that 'mom' is a well earned title.

Scott Roesner is relatively new and is in charge of establishing a dealer network and advertising. He also handles the phone, helps at trade shows and seems to handle the intricacies of beekeeping pretty well. Officially he is the sales and advertising coordinator.

Liz Brogle takes care of some of the purchasing and sales, and is in charge of the seasonal maple syrup business. She handles bee supply

Sold by the pallet, Mann Lake's wood business is getting off the ground.

calls, too. Recently, Mann Lake added two more salespeople to field phone sales calls, freeing up Stewart and Scott, at least a little.

These 'front' people are well supported by an office staff and warehouse crew that work well together. Wandering through the office, warehouse and shipping areas gives one the impression of 'family' because they all are friendly, easy going and dedicated to do what needs to be done to serve the customer.

Mann Lake Supply has a reasonable benefit program for their full time employees. They have 100% hospitalization for employees (families are extra), a retirement program and a 401K program. All told, not a bad set up for a small company in a rural town.

Actually, Hackensack is not a bad place to do business. Bustling with tourist activity from the opening day of fishing season in the spring to the last leaf in autumn, it is a quiet (very quiet) town during the winter.

Logging has declined in the area so there are more people than jobs, but the sudden influx of Native American operated gambling casinos in the area may help that.

Most of the available labor tends toward the unskilled side, so Mann Lake has had to go out of town to find the specially skilled people they need.

Mann Lake Supply, in only a dozen years or so has made a significant mark on the beekeeping industry. A carefully carried out business philosophy, carefully carried out by a topnotch crew has kept the business upright and focused.

A steady supply of new products has assisted the general beekeeping industry to become more competitive, while establishing a comfortable market share in the commercial side of the industry for the company.

Not without some problems and backward steps and with some new ventures still to be proven, Mann Lake Supply has moved boldly from tiny Hackensack to a nationally recognized operation. Q

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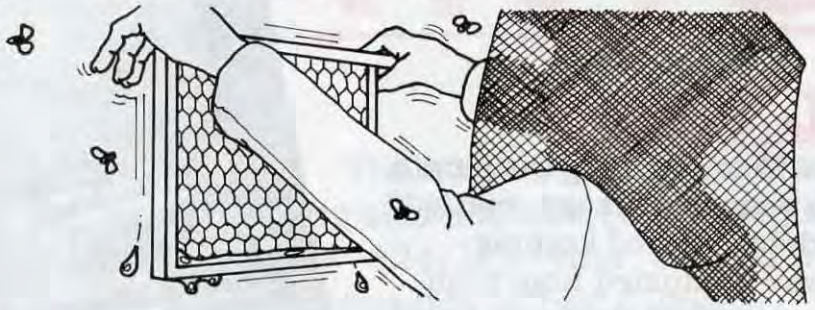

AHB - THE CHANGE

tom sanford

There's little question that African honey bee (AHB) behavior will give beekeepers cause to rethink some of their management practices. Evidence from several areas in the tropics indicates that African honey bees are often more manageable in the dark. This certainly is a turnabout, because experiences manipulating colonies of European honey bees at night are usually extremely unpleasant. It's difficult to defend yourself against an unseen bee that crawls and stings.

The risk of getting stung by crawling African bees at night, however, appears to be preferable to facing the defensivity of the bees during the daytime. Honey harvesting at night is a common practice in South Africa.[1] The beekeeper is able to see using red lights which the bees perceive as dark. A recent article, however, reports a simple, safe and inexpensive way to harvest honey in daylight, even at the warmest time of day, when the bees are most active.[2] The method uses beehives on platforms that can be easily moved, rather than being hung from trees as is traditional. First the bees are smoked, then the hive is moved at right angles from the flight path. This diverts the field bees which return to the old site where an empty hive has been placed for them to cluster and keeps them from "bothering" the beekeeper.

All this makes sense because fewer bees are left in the hive and they are younger bees that are less likely to sting. The comb is then collected as quickly as possible, put in a covered receptacle and the hive returned to its old location. Daylight harvesting of honey is advantageous all around. By being able to see, the beekeepers can harvest more efficiently and control the brood nest better, as well as detect diseases and predators.

In all the falderal about the African honey bee, beekeepers must not lose sight of two facts: (1) the African bee is a honey bee and (2) the beekeeper must adapt to the bee's behavior. The first statement is not a flip remark. Sometimes this simple fact is lost in heated discussions. The AHB is an insect, albeit a social one that has all characteristics and behavior of other honey bees. It is the degree of difference or variation in the African bee's behavior that continues to be the focus of many discussions and accounts. The most objectionable and noticeable behavior, stinging, appears to be extreme. At times the bees can be extremely gentle; however, they may also explode in an angry cloud at the slightest provocation.

From this comes the second point. The bees will probably not be the ones adapting to a different management style; the beekeepers will do the adopting. A recent letter summarizes one individual's experience with AHB in southern Mexico:[3] "I feel that the American beekeepers are not yet prepared for the arrival of the AHB. The beekeepers here who weren't prepared are the ones who are going out of business. In answer to your questions: 1. We have 50 colonies operating for honey and pollen; beekeeping is a sideline for me; 2. I plan to have large smokers built locally. We used to manage hives without gloves, veil or other protection. We now use one-piece bee suits with zip on veil and elbow gloves. I had to alter the suits to give complete ankle protection as well; and 3. We keep colonies 100 meters from the nearest house, road or livestock. After being worked, the bee stays aggressive for the rest of the day. Apiaries near roads have been burned, poisoned or otherwise destroyed because of stings received by passersby. People here don't take kindly to having themselves or their animals stung. I can just imagine the lawsuits and problems when the AHB reaches the U.S. As you no doubt know, the AHB is not being genetically diluted or hybridized, as was formerly hoped."

Other issues such as destruction of colonies by vandals, swarm control (the key to producing any honey with AHB), requeening, migrating (which he doesn't recommend) and robbing (rare for some reason) are also discussed. The writer concludes that if the aggressive (defensive) behavior of the bee could be controlled, then the problems produced by the AHB could be much better managed.

Another author makes this point:

ON·MY·BOOTS

"While some planners are considering only ways to exclude and control the African honey bees, others should be giving considerable thought to all the ways we can make it easier to live with them while we select for gentle productive strains."[4] Of special significance is the case for using bee houses, especially in urban areas. They would: (1) keep colonies out of sight; (2) make it easier to manipulate bees under all weather conditions; and (3) provide a calming effect on colonies by keeping them in permanent shade. Bee houses for the AHB were written about as early as 1960.[5] They also offer a convenient working height for colonies and provide guard bees no direct access to the beekeeper.

In the past beekeepers have routinely used swarms and bees from feral nests to strengthen colonies or reestablish those that have died. With the coming of the African honey bee, however, this practice must now be scrutinized more carefully than in the past.

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HONEY LABELS FOR TODAY'S MARKET

walter clark

The FDA may have changed the rules, but the consumer still has the power

It's August already and the beekeeping year is culminating with extracting time. I'm bottling part of my honey crop now, hoping to sell more product to my local accounts. Yesterday I was in the honey house sticking labels on jars, thinking about customers waking up in the morning, taking out a jar of my honey, and putting it in their tea, muffin mix, or on toast. I indulged in a moment of pride, then suddenly it struck me: there's other honey out there to pick from, so why did those customers bother to buy my honey over someone else's? Is it the flavor, the price? Sure, I've got good honey, but it's not always the least expensive. How about the bottle, or the package? Nothing particularly unique there. The only other thing I could come up with was that on my label I make it clear *I'm a local producer*. Could it actually be the label that sells it? I figured I wanted to keep selling, so I was determined to find out what makes my labels work, or not work.

I know when I'm not selling honey and I see other products out there, I'm determined to stay competitive and have my sideline pay off. For me, that comes down to tight marketing: products on a shelf, side-by-side. Packaging, marketing strategies and consistent delivery go into the mix. I also figure that there must be a consumer choice happening right at the shelf. Certainly, it must be the label; how it reads, and how it looks.

So with some reading and review of recent marketing research articles I discovered that many changes are happening in the area of product labeling, both in design and legal regulations. The research suggests, along with recent FDA regulations on food labeling requirements, that we will dramatically have to change the way our honey labels are now written and designed if we wish to continue selling in an increasingly competitive food market.

FDA Nutritional Labeling

Let's get the legal talk out of the way first, and discuss new federal regulations that will effect all of us.

As beekeepers, we know honey has the image of being an unprocessed and natural product. And although we should work to keep it that way, the FDA's Nutritional Labeling and Education Act officially passed in January of this year. Now honey must be labeled in accordance with the law.

First off, bottling and packing businesses with annual gross sales of over $500,000 must use nutritional labels. (A business could be exempt if the total sales are over $500,000 but food sales are less than $50,000.) That means most small honey businesses are exempt. However, consumers have given a high level of importance to nutritional labeling, so the average beekeeper might consider a label designed according to FDA regulations.

Nutritional labeling for many products is quite extensive, but for honey it has been simplified. The simplified format requires the following information: total fat, total calories, sodium, total carbohydrate, sugars, proteins, serving size and servings per container. The serving size per container has been set by the government at one tablespoon (21 g). The FDA has established a specific layout for labels containing nutritional information which is too extensive for the scope of this article, but a sample is shown below.

Honey Board Research

The National Honey Board recently had an independent study conducted on "consumer perception" of honey labels. ("Consumer perception" are big words for what the survey respondents thought of the honey labels.) After studying a copy of the report I found consumer perception of label elements not only fascinating, but significantly different from the elements found on traditional honey labels.

I also found this an exciting opportunity to modernize the way my own labels read and look. As you'll see, your label, if you desire, is an advertisement of how your honey is created and its quality. And consumers notice it. The *design and information* on your labels is really what keeps customers coming back. The label helps the customer window-shop on your goods, and it makes a big impact on your honey sales.

Private Labels Have the Edge

Private labels are what makes the grocery business buzz these days. Private labels are primarily store brands, and are essentially labels used for packaging under a chain label. Ironically, they may even contain the same product as national brands. So, what can we as producer-packers gain from this? Well, a private label much of the time means a *local* label. Beekeepers are in essence private label producers. When you walk into a store, you want that store's products at a good price; private label buyers then want the local product.

Private labels are big sellers. They accounted for 18.5% of total grocery sales in 1992 up from 15% in 1988. That's *twice* the growth rate of national name brands, and experts say in the next five years private labels could account for 25% of the grocery market. But the competition's stiff. "Over 11% of products on the grocery store shelf are

new each year. That means a big turnover in a very short period for products that don't move out of the warehouse," one big food-chain dry goods buyer told me recently.

Private labels aren't always the cheapest or the most expensive product on the shelf, either. But they are *perceived* as being the best for the money. This established trend could really put a sting to the big imports, especially with labels acting as a deciding factor in purchases. However, it does mean local labels get noticed in spite of shelf dominance by big packers or even out-of-state sellers, and that's good news for the small honey producer.

The Honey Board research uncovered some interesting facts about label design and consumer choice. Let's look at how they might effect your choice of label and what you can do to enhance your product's appearance.

Who is the Honey Consumer?

Private label buyers look like this: she lives in a $25,000 to $55,000 income household; usually female; ages 25 to 49, and primary household grocery shopper. These people are the big buyers of private label products, and account for a large portion of honey sales, particularly in larger metropolitan areas.

Quality, Natural and 100% Pure

First of all, it was discovered your label should allow for the word "honey" to be in big bold letters. Don't laugh! This may be obvious to most of us, but many labels are so cluttered the word "honey" is lost among the others. Being able to read it from a distance is important too, so don't crowd the elements on the allotted label space. The study also found several words, (which equal "consumer perceptions") that highly control consumers' purchase interest in honey. They are: Quality, Natural and Purity. Far above any other label copy, these words are critical. You can choose to use one or all of them, but a full 92% to 95% of consumers voiced a desire for the honey to have "100% Pure" or "Natural" on the label.

Graphically, a white background seemed to elicit the best response. Second was a colorful background including yellow or green. There is a tendency toward bright colors in labelling and consumers tend to like this although they don't indicate it is necessary to buy the product.

Information for Your Customer

Honey shoppers are looking for good, back-to-basics products, but they also need education on how to use it. They want information on how to substitute for other sweeteners, what to do about crystallization, storage, and basically how to use it. They're hungry for honey recipes utilizing the microwave and other contemporary cooking styles.

I used to think that recipes on labels and recipe cards accompanying products were a waste of paper. Not anymore. My wife, (who is the best honey salesperson I've met), has taught me the importance of including recipes with our honey jar. This year, we had 12 different cards printed up. The cards are about the size of a bushiness card, with varying recipes on them, and the card's letter style and colors match out label. Along with the recipe on the card we include serving tips, preparation times, our name and phone number.

People who buy from us really go for them. We tie recipes onto the jar lid with a rubber band, make those recipes contemporary and easy to use, and put them on all of our honey jars, whether it's on the store shelf or at the farmer's market. We use recipes like "Tangy Honey Sauce for Meat and Chicken," or "Asian Style Honey Marinade." We have customers come by and say, "I love that recipe," or "Let me tell you a new way I've been using honey."

An easy and inexpensive alternative to attaching recipes or information cards to your bottle with rubberbands is to use a back label. In fact, a back label could contain loads of information that, if used appropriately, could make your front label even more attractive.

For instance, a back label, printed in one color with a white background

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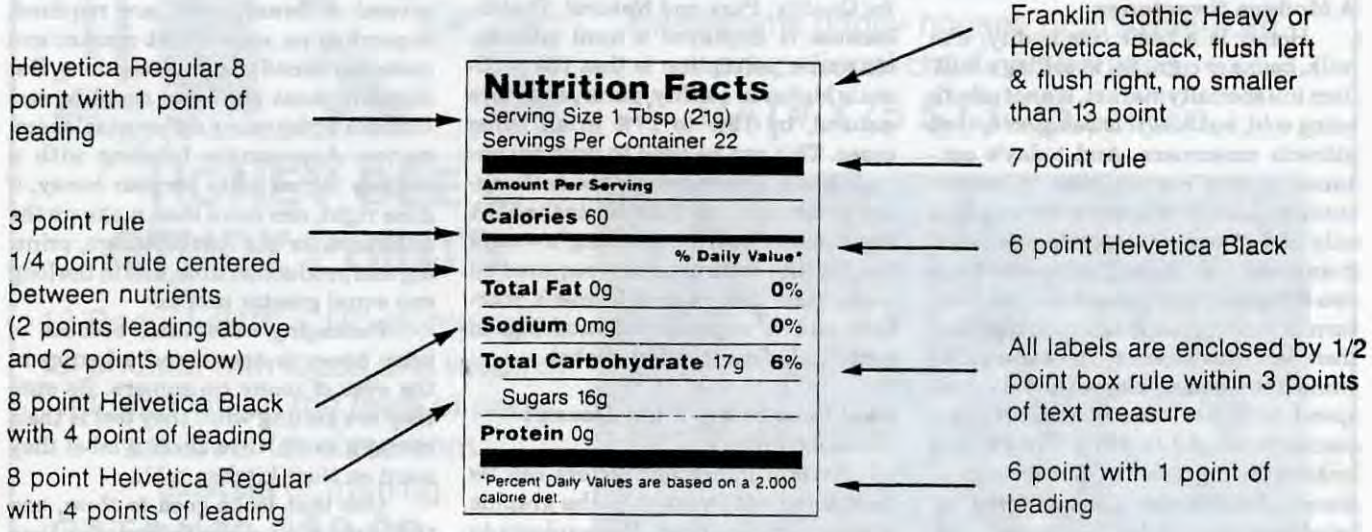
NUTRITION LABEL GRAPHIC REQUIREMENTS



The FDA dictates these dimensions and graphics must be precisely as indicated here.

Consider a back label. It can make your front label more effective and more attractive.

HONEY LABELING ... Cont. From Pg. 445

could contain the new nutritional information, crystallization information, a recipe and a little bit about your operation.

There is an extra cost, but it goes so much further than the national brand you're competing with.

Convenience a Key

A fourth factor revealed in the study, although not as significant, was what researchers called a "contemporary" element. That means, by my interpretation, people are looking for a modern-looking label. This tells the consumer the company is up to speed on quality, naturalness and purity. It also means they are looking for modern *uses* of honey as well.

A Modern Sweetener

Honey is a basic commodity, like milk, beans or corn. So, in selling a bulk item to a specialty market, it's not *what's* being sold, but *how* it is being sold, that attracts consumers. And today's consumer wants convenience. A recent study by *Adweek* magazine showed that only 31% of survey respondents cooked from scratch at home. That means fully two-thirds of American consumers don't turn to raw ingredients to put together their daily sustenance. The survey also found that homemakers that do cook spend 50% less time at it than their counterparts did in 1973. They're not looking for ingredients, but for convenience. Your honey must become labeled as a product for the modern consumer: quality, natural, 100% pure, and convenient. Consumers concerned with purity and naturalness at the same time want a contemporary use.

Other copy attributes, such as Health Food, Value, American made, or Fresh seemed to have little impact on label effectiveness. And country of origin didn't seem to pique consumer interest. Interesting that many beekeepers believe that labeling their product with the country of origin will have an effect on consumer behavior. This doesn't appear to be true. The widespread use of "Made in U.S.A." may simply be evidence label manufacturer's have had an effect on beekeeper's behavior instead of on the consumer.

Your Local Address

Another fascinating and important factor here: labels with a local address printed on them got the highest ratings for Quality, Pure and Natural. That is, because it displayed a local address, consumer perception is that the product is higher in quality, purer, and more natural, by 15% to 17% in all three cases. This can be used to your advantage, but it also increases the beekeepers' accountability. Add this to the FDA regulations, local food packing laws and the liability insurance now required by some store chains and farmer's markets, and we've got a lot of watchdogs to consider before creating a label.

Real Bees Sting: What Doesn't Work on Labels

Several important factors can be considered with regard to the graphic elements on the label. Respondents to the Honey Board research indicated that anything to do with beekeeping that appeared realistic was undesirable. Bees, skeps, trees and fruit all received low ratings. Bees themselves in fact induced a sense of anxiety in a few of the research participants, indicating that even though people like honey they don't necessarily associate its creation with a stinging insect. It is best advised to stay away from bees in graphics unless they are highly characterized, like a cartoon.

Quality Product, Right Label Equal Success

With a small amount of product and a good label, you can serve your accounts' customers and compete against national name brands and generic packers. And again, you don't always have to have the lowest price.

The way you label your product depends much on who your target customer is and where your product will be sold. You can use ready-made labels, and there are a number of good ones on the market that allow space for flexible amounts of copy. Or you can design one of your own. Quantity is a factor here since the more you print, the less expensive each label will be. When talking quantity, having 10,000 labels printed can be a small order.

Having artwork done, cutting a die for a new shape or running more than one color in printing can be expensive. However, with new desktop publishing methods and a little handiwork, your local print shop may be able to help you create the right piece of labeling.

So, cost effectiveness in having a label made depends not only on how and where you sell it, but on the amount of product you sell. In your case, maybe several different labels are required, depending on your target market and customer benefits and perceptions. But in many cases one label could be serviceable under many different sales scenarios. Appropriate labeling with a slightly higher price on your honey, if done right, can more than make up the difference for the cost of design, printing and production time, and in the long run equal greater profits.

Packaging sells. And, because of price honey is considered a luxury in the eyes of many consumers. Be sure they are getting what they feel is their money's work. Give them a label they want on their kitchen table.

One that looks good *to them*, one that gives *them* all the information they need to use the product, and one that is a continuous and constant advertisement for honey and your business.

Explore this newest marketing idea

WAX WORM FRITTERS

(and other edible delights)

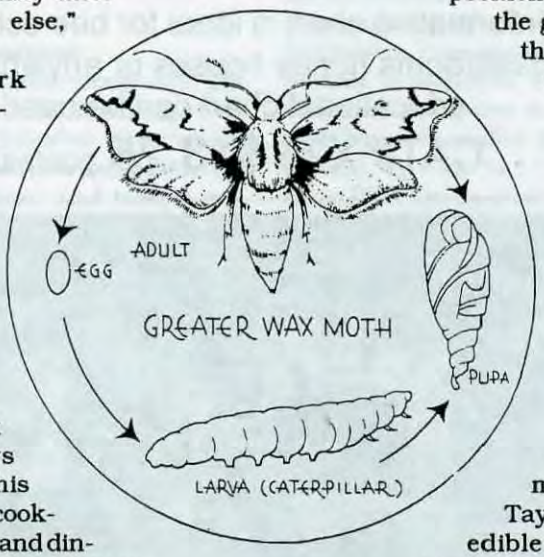
gail damerow

When life hands you lemons, make lemonade. When life hands you wax worms, make wax worm fritters.

Wax worm fritters and other delights are part of the growing phenomenon of insect cuisine, largely inspired by last summer's much-acclaimed First Annual Bug Banquet at Manhattan's sheik Explorers Club. Cooking with bugs isn't much different from using any other ingredient, says Sharon Elliot, head chef for New York Parties, the Greenwich Village catering service that handled the banquet. "Once you get over them visually, then they taste like anything else," says Elliot.

Chef Mark Nevin of The Insect Club, a highly successful restaurant and nightclub in northwest Washington, DC, concurs. "It's just another form of meat to work with," says Nevin, who this spring began cooking up lunches and dinners with creepy crawlies imported from the West Coast.

California entomologist Ronald Taylor and his former student Barbara Carter, co-authors of the pioneering cookbook *Entertaining with Insects, The Original Guide to Insect Cookery*, found that objections to eating wax worms and other insects have little or nothing to do with taste, but with appearance. They discovered that people who overcome their prejudices and try insect dishes usually like them very much. Their cookbook served as inspiration for the chefs who prepared the Bug Banquet. Although the book was out of print at the time, by popular demand it has since been reprinted.



Beekeepers are uniquely positioned to get in on the ground floor of this latest cuisine craze, having ready access to two of the tastiest among entomological edibles – greater wax moth larvae and bee brood. Wax moth larvae, as ugly as they may be, are Taylor's favorite edible insect. Pity, says he, that they aren't available commercially.

Well, since his book first came out in 1976, larvae of the greater wax moth *have* become commercially available. Three sources, no less, are listed in a recent issue of "The Food Insects Newsletter" –Waxworms, Inc., in Cameron, Wisconsin, Grubco, Inc., in Hamilton, Ohio, and Rainbow Mealworms in Compton, California. There are others, too.

But, hey, who among us would be crazy enough to go out and buy wax worms? All we have to do is get a little sloppy in our management, wait until they show up, and collect them by the cupful.

Preparing Wax Worms

Greater wax moth larvae aren't just a novelty food. They're also an excellent source of protein, unsaturated fats, and an impressive array of minerals and other nutrients. Taylor and Carter characterize them as being thin-skinned, tender, and succulent, and recommend that, like lobster, they be cooked live or fresh frozen. The authors suggest that you spend the necessary time cleaning, packaging, and freezing a sizable quantity so you'll always have wax worms ready to cook at a moment's notice.

The best time to harvest wax worms is when they start spinning cocoons and have voided digestive wastes. Just wash and dry them, then boil or roast. Or tuck the worms in your freezer for future use.

Wax Worm Flour

Pulverized roasted wax worms

look a lot like whole wheat flour and can be used in many of the same ways. To make flour, spread cleaned fresh or frozen wax worms on a cookie sheet with paper towels. Bake at 200°F for one to two hours or until they reach the desired state of dryness, tested by crushing one with the back of a spoon. Cool the roasted larvae, put them into a blender, and whirl them into a delicate flour.

Fried Wax Worms

Tony Mininno, who devised the menu for the Bug Banquet, came up with the idea of tossing crisply fried wax worms with chili flavoring and serving them as trail mix. When dropped into hot vegetable oil, greater wax moth larvae swell, elongate, and burst. They end up looking nothing like an insect, but rather more like popcorn.

Anyone who enjoys the flavor of potato chips would delight in the taste of fried wax moth larvae at least that's what Taylor and Carter believe. They envision the day when fried, salted larvae will be packaged in cellophane and displayed in the supermarket, right along with other popular snacks.

Wax Worm Fritters

Instead of serving fried wax worms as munchies, you might prefer them in Elliot's unusual fritters.

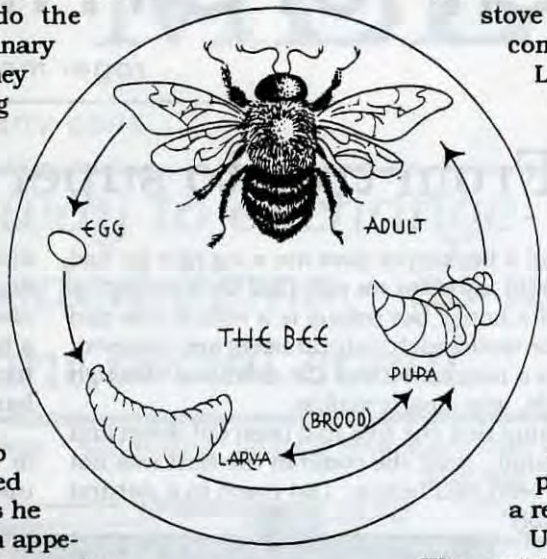
1 large egg
1/3 cup creamed corn
1/3 cup canned corn
3 4 tablespoons corn meal
3 tablespoons all-purpose flour
1/4 teaspoon baking powder
1/8 teaspoon salt
pinch pepper
pinch nutmeg
3-1/2 tablespoons butter
3/4 cup fried whole wax worms
1/2 cup corn oil

Beat egg until light and add corn. Stir in corn meal, flour, baking powder, salt, pepper and nutmeg. Melt butter and add to mixture. Fold in fried wax worms. Ladle 1/2 ounce portions into a deep fryer containing hot corn oil. Serve fritters hot with plum sauce. Makes 24 very small fritters.

Sharon Elliot, head chef
New York Parties

Bee Brood

If greater wax moth larvae don't make your digestive juices flow, maybe bees and their brood will do the trick. The culinary aspects of honey bees have long been enjoyed by other cultures, suggesting another good reason besides honey for tending hives. Joseph Alsop once described the fried bees he enjoyed as an appetizer in a Tokyo restaurant as tasting like a cross between pork cracklings and wild honey. Among the taste-tempting treats included in *Entertaining with Insects* are Honey Bee Souffle, Bee-Oatmeal Cookies, and Stollen made with candied bees.



The authors point out, however, that compared to adult bees, brood is both tastier and easier to adapt to a wide variety of recipes. In the Philippines, a big problem facing beekeepers is the theft of brood-filled comb by neighbors who consider it a culinary delicacy. Like wax worms, bee brood has strong commercial potential as a food source. Dr. Justin Schmidt of the USDA's Carl Hayden Bee Research Laboratory in Tucson has been investigating the marketing possibilities.

Since brood is too valuable for most beekeepers to consider eating, Taylor and Carter suggest harvesting brood that would otherwise be destroyed from unwanted settled swarms. To get brood out of the honeycomb, put the comb in a kettle of water and heat it on the stove until the wax completely melts. Let the water cool until the wax solidifies on the surface and can easily be removed You'll find the cooked brood at the bottom of the kettle. Freeze them for later use, eat them as is, or incorporate them into a recipe.

University of Wisconsin's Gene DeFoliart keeps fellow entomologists and non-specialists informed of the latest trends in insect cuisine through *The Food Insects Newsletter*, in which he encourages readers to share their tried-and-true recipes. DeFoliart believes that if bee brood, wax worms, and other insects became more widely accepted, they would form a whole new class of foods made to order for small-business and small-farm production.

"Beekeepers have ready access to two of the tastiest edibles."

Doing his part to promote the respectability of insects as food, DeFoliart gives a passing grade only to those of his students willing to eat fried wax worms. Among those who have savored DeFoliart's cuisine over the years is the illustrious editor of *Bee Culture*.

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Food Insects Newsletter is available from the Department of Entomology, 545 Russell Laboratories, University of Wisconsin, Madison, WI 53706. A $5.00 donation is appreciated to help defray costs.

Entertaining with Insects, The Original Guide to Insect Cookery, by Robert L. Taylor and Barbara J. Carter, is available for $19.00 postpaid from Salutek Publishing Co., 5375 Crescent Drive, Yorba Linda, CA 92687.

Transferring Bees

roger morse

From tree to super . . .fast and easy

This past fall a beekeeper gave me a log hive he had obtained for use in my class on practical beekeeping. A natural home of a honey bee colony is a hollow tree and in our part of the world such natural nests are common. This nest was in a maple tree and the entrance, through a rotted knothole, was clearly visible.

It is interesting that the tree had been cut down and fallen to the ground. Still, the comb in the nest was not broken. I have seen this before. Old comb in a natural nest is remarkably strong.

Removing the bees from an upright hollow log is a simple matter. The best time to do so is in the spring so that the bees have time to gather sufficient food for winter.

However, they are most commonly found this time of year, when colony population is largest, and trees are being cut – for fuel or whatever.

The first step is to remove enough of the log so that the top of the nest (the comb) is fully exposed. Then a piece of plywood is cut with a large hole in the center that serves as a cover for the log nest and an entrance to a super of drawn combs that is placed on the plywood. The hole should be roughly the same size as the super, but small enough to support it securely on top of the log. A solid resting place is recommended. If possible, block the bottom entrance after a week or so to encourage upward movement. This is not always possible, however. An upper entrance can be made by drilling a hole in the end of the super. (The hole should be below the hand hold so that when the super is picked up one's hand does not cover the entrance.)

If there is no barrier of honey between the brood nest in the log and the super of combs the queen will move upward quickly and occupy and lay eggs in the super of combs. If there is a barrier of honey then the whole process will be delayed until it is removed by hand or the bees consume it. A queen will not cross a barrier of honey to make a new brood nest no matter how congested the brood nest in the log may become.

When the queen is laying in the super of combs a queen excluder is placed between the two units. After 24 days all of the drone and worker brood in the log hive will have emerged. At this point the super of combs, which is now the new home for the colony, may be set on a bottom board and the log nest carried away for firewood.

It is not legal or advisable to keep bees in a log hive because the combs cannot be manipulated and examined for disease. When we examined the comb in the nest pictured here we found it was old and black. Bees had obviously lived in this hollow tree for many years.

SWAP MEET

larry goltz

An excellent way to exchange unneeded for needed items – as well as a pleasant social event

There are few beekeepers who don't have equipment that they no longer need. Conversely, many of us are always ready to buy an item or two if it's fairly priced. A beekeepers' swap meet is a convenient way of exchanging unneeded for needed items.

Recently the Shasta Beekeepers' Association of northern California held such a swap meet. It was a new experience for most of us. At an earlier meeting one member who had warehouse space available came up with the idea and offered to help with sales and exchanges .Everyone had an opportunity to bring in beekeeping paraphernalia to be sold or exchanged. The swap meet was held on a Saturday morning, from 9 a.m. til noon. Having the swap meet in the early spring season was perfect timing since spring is generally a "house-cleaning" time and that's when equipment is needed for the coming beekeeping active season. However, fall or winter swap meets can work well, too, since after a season you know exactly what you'll need next season – and what you won't.

Shannon and Glenda Wooten sponsored the Shasta Beekeepers' Association swap meet.

The swap meet was a learning experience but a successful one. Beekeepers registered in Shasta County were notified several days in advance of the time and place and were invited to contribute to the equipment display. A classified ad, under the newspaper heading "Bees and Honey," brought beekeepers from as far away as a hundred miles.

The bulk of the items arranged neatly around the center of the warehouse consisted of basic items needed by most beekeepers: Wiring apparatus, uncapping knives, hive tools, veils, gloves, honey jars, display cases, pollen traps, excluders, wax foundation and several extractors. For $200 you could buy a sizable collection of new round comb honey supers and section equipment. First-time beekeepers had the opportunity to buy some necessary items of equipment at bargain prices. Why weren't these bargains available when I needed them!

For beekeepers already well supplied with equipment a swap meet is a chance to either sell or exchange surplus equipment. Most beekeepers can't resist buying and accumulating "things" Well, this is one way to everyone's advantage.


Beekeepers of wide experience were on hand to offer advice. Left to right: Shannon Wooten, Homer Park and Ed Allen.

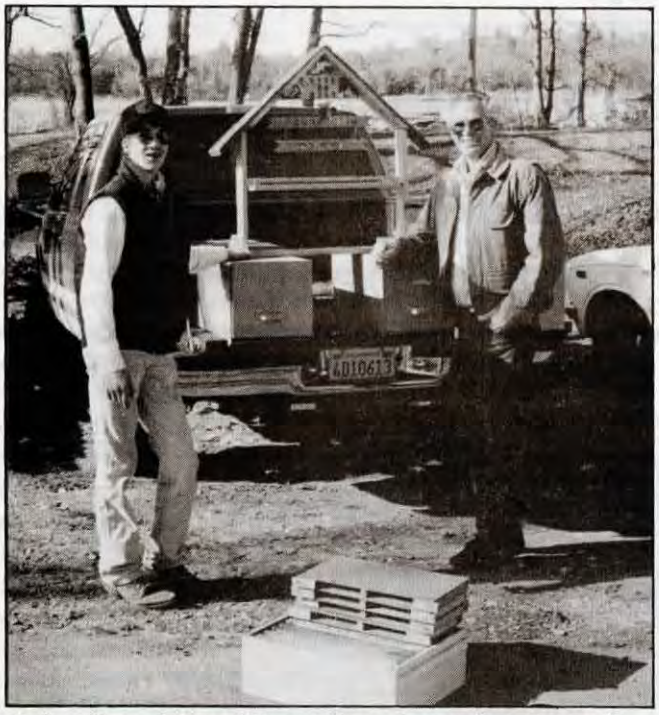
A bonus for our association was the opportunity to talk to prospective and new beekeepers. Six new members were signed up. Friendly experienced beekeepers were on hand to answer questions and demonstrate the use of various equipment.

If you decide to run a swap meet, keep in mind

Continued on Next Page

SWAP MEET ... Cont. From Pg. 451

Need an uncapping knife? Just a sample of some of the beekeeping items on display at the Shasta Beekeeper's swap meet.



Luke Silkwood (L) and Dave Silkwood came from Susanville, California, nearly a hundred miles away to take home a truckload of assorted beekeeping items from the swap meet.

that there may be some restrictions on what can be offered for sale. Supers with wax should probably be limited to new equipment with foundation. Hive tools, smokers, gloves and bee suits, for example, should be thoroughly cleaned and disinfected. Be careful of accepting queen excluders, hive parts, pollen traps, hive stands, bee escapes and other items badly soiled or gummed with wax and propolis. Even hive parts that have been scraped clean may harbor foulbrood spores. Some states require a certificate of inspection before used equipment is sold.

Publicity plus attractive and convenient displays are secrets of success in beekeepers' swap meets. Yours, like ours, may be a pleasant social event as well.

HOME HARMONY

ann harman

Grilling Out

August is really a wonderful month if you can look beyond the late summer heat. The vegetable garden is in full swing (You still haven't figured out what to do with all that zucchini?) and various fruits are in abundance. August is a nice time to be lazy, Don't bother with the weeds. The vegetables are big enough to compete and, besides, the weeds will be gone when frost comes. The grass is sulking in the summer heat, so there's no need to mow it. August must be responsible for the expression "it's too hot to cook." That's why the barbecue grill is America's summer kitchen. A gentle breeze can keep the cook cool and waft the delicious aromas around to stimulate appetites. Menus can be very easy: a grilled meat, such as ribs, chops or chicken, a nice salad and some appropriate mustards and relishes. Cleanup is sometimes quite easy – a quick summer shower is frequently all that is needed to scrub off the grill and table.

Although barbecue cooks have their own special concoctions for sauce, a little variety can only enhance their reputations. Honey has a definite place in a barbecued meal since it can be used in so many ways: in barbecue sauce, salad dressing, mustards and relishes. Since these are so flavorful and tangy, you can use honey in a number of recipes without feeling you've overdone it.

Before we begin, we need to make a few important ingredients, namely honey vinegar and honey mustard. Elaine White of Starkville, MS, has written a wonderfully useful book, "Super Formulas, Arts and Crafts" and here we will find our recipes.

Basic Dijon-Style Mustard

2 cups dry wine
1 large onion, chopped
3 cloves garlic, pressed
1 cup (4 ounces) dry mustard
3 tablespoons honey
1 tablespoon oil
2 teaspoons salt

Combine wine, onion and garlic in a saucepan. Heat to boiling and simmer 5 minutes. Cool and strain, discarding the solids. Add the liquid to the dry mustard and stir until smooth. Blend in honey, oil and salt. Return to the saucepan and heat slowly until thickened. Stir constantly. Allow the mixture to cool and place it in a covered jar. Age the mustard 6 to 8 weeks, or to suit your taste, then refrigerate it.

Elaine has lots of information about mustards in her book. For example she tells us newly prepared mustard is at its most pungent (hot) state. If you like your mustard hot, then refrigerate it right after making it. However, if you wish to make the mustard milder, age it at room temperature in a dark place until it suits your taste. Then refrigerate it.

Now that you've made your mustard, let's use it for some chicken. In order for all pieces of chicken to be done at the same time, you may wish to microwave the thick pieces, such as the breast, until they are partially done. Then coat with barbecue sauce and grill. Some people find buying all the same pieces, such as all drumsticks or all breasts, makes grilling simple. No matter which way you go, remember that barbecue sauces containing honey tend to burn easier and quicker than sauces made with sugar.

Mustard-Barbecued Chicken Legs

2 tablespoons Dijon-style mustard
1 tablespoon dry white wine OR honey vinegar
1/4 teaspoon *each* crumbled basil, oregano, rosemary, thyme
1 clove garlic, minced or pressed
4 whole chicken legs (thighs attached)

In a small bowl mix mustard, wine, herbs and garlic until well combined. Spread the mustard mixture evenly over all sides of chicken. Cover and refrigerate about 3 hours. Arrange chicken in grill about 6 inches above glowing coals. Grill legs until well browned on both sides, turning once, about 45 minutes in all.

Elegant Meals With Inexpensive Meats
Cynthia Scheer for Ortho

Dick's Barbecue Sauce

Now here is a recipe that uses two of Elaine White's recipes – mustard and vinegar.

2 unpeeled lemons, quartered and seeded
2 onions, quartered
2 cups water
1 cup margarine
1 cup honey vinegar
1/2 cup honey
1/4 cup prepared mustard
2 tablespoons salt
2 teaspoons freshly ground pepper
1 teaspoon ground red pepper

Combine all ingredients in 3-quart saucepan and bring to boil over medium-high heat. Reduce heat and simmer 20 minutes. Transfer to blender or processor in batches and puree until smooth. Let cool. Pour into jar with tight-fitting lid. Store in refrigerator.

Cooking With Bon Appétit: Poultry

Honey Lime Marinated Pork Tenderloin

Sometimes we get stuck in a grilling routine of chicken legs and hamburgers, hot dogs and steaks. Although these are very good and lend themselves to interesting sauces, a bit of variety in the grill menu might make a welcome change. For this

next recipe we will need some pork tenderloins and, of course, some of your mustard made with honey.

1/3 cup lime juice
1/4 cup olive oil or vegetable oil
1 teaspoon coarsely ground pepper
1/2 teaspoon salt
1/2 teaspoon cumin
1/8 teaspoon cayenne pepper
2 tablespoons honey
1 tablespoon Dijon mustard
1 teaspoon finely chopped fresh garlic
1 teaspoon grated lime peel
2 (3/4 pound) pork tenderloins

In medium bowl stir together all ingredients except tenderloins. Pierce tenderloins all over with fork; place tenderloins in plastic food bag. Pour in marinade and seal tightly. Let stand 20 minutes. Remove tenderloins from marinade and reserve marinade. Grill tenderloins, basting with marinade and turning occasionally for 15 to 20 minutes. Let stand 10 minutes. Meanwhile, in 1-quart saucepan cook remaining marinade over medium heat until mixture comes to a full boil (2 to 3 minutes). To serve, slice tenderloins on the diagonal. Serve with marinade.

Land O' Lakes Treasury of Country Heritage Meals & Menus

Green Tomato Pickles

No backyard cookout is complete without a bowl of pickles. About this time of year your tomato vines are probably bent over with tomatoes and you've made juice, canned tomatoes, frozen tomatoes, and more. Go back to your vines and find some nice green tomatoes, cook up these pickles, use some for your barbecue meal and preserve the rest.

2 quarts medium-sized green tomatoes
3 tablespoons salt
2 cups honey vinegar
1/2 cup honey
3 tablespoons mustard seed
1/2 teaspoon celery seeds
1/2 teaspoon turmeric
3 large onions, thinly sliced
2 sweet bell peppers (red) thinly sliced
1 tablespoon minced hot red pepper

Remove the stem end from the tomatoes and slice them about 1/2-inch thick. Toss with the salt and let stand in a glass or enamel container for 12 hours. Drain. Heat the vinegar, honey and spices to a boil. Add the onions and simmer for 3 minutes. Add the tomatoes and peppers and simmer for 5 minutes longer, stirring gently occasionally. Pack into hot sterilized jars to within 1/2-inch from tops. Complete seals and process for 5 minutes in a boiling-water bath.

Putting It Up With Honey
Susan Geiskopf

Fruit Salad With Poppy Seed Dressing

Although you may not be keeping up with your fresh tomato supply, perhaps you can set them aside for one meal and try this fruit salad with your barbecued meat.

2 cups torn leaf lettuce
1 8-ounce can pineapple slices (juice pack)
1 cup strawberries
1 cup cubed honeydew melon
1 orange, peeled and sectioned
1 kiwi fruit, peeled and sliced
lemon juice (optional)

Poppy Seed Dressing:

3 tablespoons honey
1/4 teaspoon finely shredded lemon or lime peel
2 tablespoons lemon or lime juice
3/4 teaspoon poppy seeds
dash ground mace

Place ingredients in a screw-top jar. Cover and shake well. Chill till serving time. Shake well before using. Makes about 1/3 cup dressing.

For the salad: Divide the torn leaf lettuce among 4 salad plates. Cut the pineapple slices in half. Arrange the pineapple slices, strawberries, honeydew melon cubes, orange sections, and kiwi fruit slices atop the lettuce. The lemon juice can be used to brush over the kiwi slices to keep them from turning brown. Cover and chill salad for up to 1 hour.

Family Favorites Made Lighter
Better Homes and Gardens

Some kitchen gadgets are just that – a gadget. Others really work and do the job they are intended for. Such a gadget is a lettuce spinner. Don't laugh, but it looks like a miniature washing machine – and that is exactly how it works, but you do the spinning. Wash your greens well (especially spinach, which can be quite gritty) and put into the lettuce spinner. Close the cover and turn the crank. Wonderfully dry salad greens are your reward for a few turns of the crank. My lettuce spinner has been hard at work all summer. If you don't have one, try to borrow one to see how it works.

Now that you have your grill hot and your sauce prepared, you're all ready to send the delicious aromas of backyard grilling around the neighborhood. I hope someone comes by to ask for the recipe you are using. Grilling is an easy way to advertise how versatile honey is in home cooking.

INNER COVER ... Cont. From Pg. 412

If your business needs some attention you could consider those sorts of things too, but have them where you can sell honey to the throngs that flock in.

A Honey Harvest Day at Harold's Honey House would work. Or just a "One day only bring your own bottle" event would sell honey and attract attention. Something with kids in mind doesn't hurt; sponsoring a field day for one or more local associations; candle making workshops; Christmas time present making – all qualify as an event worthy of a press release. I'm sure you can think of many more – especially focused on National Honey Month.

Yes, the National Honey Board supplies an entire media package for you to use. It's well designed, attractive and has loads of information. You would do well to use it. But it has one serious drawback. If you look closely, on every page, in every folder you will notice one very important element missing – *your* name, address, and phone number.

If you want the paper to get back to you, to ask more questions, to do a follow up story, to be able to send customers your way – you absolutely, positively *must* have some information available on how to do exactly that. Who you are, where you are and how to call – details, but very important details.

What else about a press release?

Don't shotgun your release – don't send the same story to every paper in the state. Rather, slant them to the audience intended – small town audience, big city, rural, urban Try to be somewhat familiar with who you are writing for.

Put the most important stuff first. To make it fit editors start cutting at the bottom and work up. If the date is in the last paragraph . Get it organized so the editor doesn't have to work to rewrite, while still providing enough of the right information. (That goes for plain old meeting notices to trade magazines, too.)

Presentation is important. Typed, double spaced critical. Contact person and phone at top, right hand corner. Centered, the release date. Below that a good headline. Sum up what the release says in a few words. Use a hook, catch the editor's eye, or it probably gets round filed.

Make sure to answer the five W's – who, what, where, when, why.

Be concise, factual, challenging and imaginative. And don't forget the pyramid – important stuff first.

More than one page? Put "More" on the bottom of the first page. Don't have more than two pages. Period. But, you may have 'background' information. Some aspect of your release may need more explanation – that's where the Honey Board package comes in handy. Send it along. It will only help.

And don't follow up with a phone call. If it was good your release will be used. If it was great, *you'll* get a call. If it wasn't don't give up. Try again. Persistence, practice and patience are all you need.

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About this time of year you begin to see 'for sale' ads for vehicles used in the business. Mostly trucks, but bobcats and forklifts, too. Buying a used machine can be an adventure – some are looking to upgrade their operation and are cash rich at the moment (beekeepers being cash rich may be an oxymoron, I'll check), others are looking to downscale, still others are just in it for the 'deal'.

Whatever your agenda there are some 'buyer beware' flags to keep in mind. Common sense is the rule. That, and 'if it's too good to be true, it probably is', are two that come to mind.

But I recently read an article with a few more rules that I pass along for your edification. When you see these, think again.

"Needs Work" – Only God could fix it, and then with only two *really* good mechanics
"Stored for the last 6 months" – Can't get it started
"Rough" – Junk
"Hydraulics a bit slow" – Broken
"For parts" – 1 valve stem still works
"Best Offer" – Way, way too much
"Must sell" – Wife finally laid down the law
"50% rubber" – Doesn't hold air
"New rubber" – Recaps
"Not many like this one" – None left, anywhere
"Runs" – Doesn't, at least when you're there
"Haven't had any problems" – Haven't driven it
"Color matches perfect" – If you're color blind
"Reasonable" – Did you just win the lottery?
"Dependable" – Worked once, awhile back
"Around $$$" – Figure around 3 times $$$
"Overhauled" – Repainted
"Restored" – Repainted, with decals

The article was originally about tractors, and was printed in *Green Magazine*, published in Bee, Montana. I thought it would be completely appropriate here.

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As testimony to the tenacity of the beekeeping industry's lobbying efforts in Congress this year I offer the following. On a recent Sunday morning news program – 'This Week With David Brinkley', the subject of the honey subsidy came up, again, while the Secretary of the Department of Agriculture was being interviewed.

He was asked if he intended to get rid of that horrible handout. His reply was perfect – it would remain by legislative decree – congress was to blame for that decision.

Mr. Brinkley, in his usual manner and subtle wit then replied .

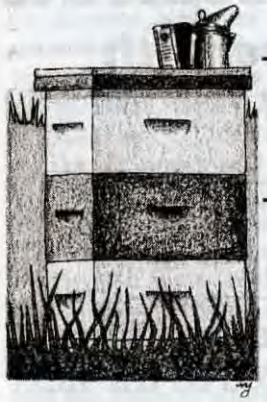
"You mean, Mr. Espy, that the only way to get rid of the honey subsidy is to get rid of congress. . "

No matter which side of this particular fence you're sitting on it certainly seems that way. A past Secretary of Agriculture, Mr. Block, warned Mr. Clinton to not spend any political currency on that particular subject.

"It's too small to do any good, and too visible to argue with", he said, and then, picking up some of the rhetoric often heard during congressional debates about the program he told Clinton, " there are sweeter deals to make."

Had Shakespeare known of Senators and Congressmen, and some political commentators, one wonders what he would have done with them, first?

Kim Flottum



BEE TALK

richard taylor

"Both God & Nature work in mysterious ways."

Many a beekeeper has discovered, with astonishment, normal brood in a colony that had been deemed queenless. Sometimes a beekeeper will fail repeatedly in an effort to requeen a colony, only to discover, that the colony has a queen after all. One assumes that there must have been a runt queen cell in the hive, easily overlooked, or perhaps a runt queen, not easily distinguishable from the workers, and that this queen finally got herself mated and began laying. Meanwhile the bees were rejecting every introduced queen, because it is virtually impossible to get a colony to accept a new queen if they already have one, be it nothing more than an inferior queen cell or a few laying workers.

But that is not always the explanation. Sometimes the mystery is much deeper, and some graduate student will deserve a Ph.D. for unraveling it.

Here is how I know this. But first, I must interject that I have always been overwhelmed by the mysteries of nature and, especially, of honey bees. The things that bees are capable of doing are mind boggling, especially in the realm of intercommunication. So whenever I find someone suggesting that these things are not really so mysterious, that there is a simple explanation for it all, then I say that this person's eyes are not really open.

Here is the latest mystery. I made up a lot of three-frame nucs this spring, to supply my friends who had lost bees over winter. It is pretty easy to tell whether a three-frame nuc has accepted the new queen. You wait a few days and then you can almost always see her there on the comb, if she was accepted. Or, if you don't see her, you'll find eggs in the cells and, depending on how many days she's been out of the mailing cage, some young brood, too. But if she has been rejected, you will see no queen, no eggs and no very young brood – only the brood that was in the combs when you made up the nuc, which will by this time be capped over. And what you *will* see is runt queen cells, built on the surface of the comb. Any such queens are sure to be inferior, because such a small colony cannot produce enough royal jelly to make good queens and because the larvae from which they are raised are apt to be too old to convert into good queens.

This year, among the many nucs I made up, I found a few that had clearly rejected the queens I'd introduced. And it was one of those, in particular, that presented the mystery of mysteries. No queen could be found, more than a week after I had made up the nuc. There were no eggs in the combs. And no young brood. In fact, no uncapped brood at all – just the sealed brood that had come from the parent hive. There were the usual runt queen cells here and there on the surface of the combs; not many, but a few. None of these had anything in them. But then I discovered, on the bottom of the comb, and hanging down, a fresh queen cell, of exactly the kind that bees build when they make swarm preparations. And in it was an egg!

Now where did that egg come from? I know there was no queen in that nuc. There is no way there could have been. The queen I had introduced had clearly been rejected, and there certainly was no queen there when I made up the nuc. Had there been one, there would have been young brood, and there were not even any eggs, except for this solitary one. And there were other reasons for knowing there was no queen present, not even a virgin. I was astounded.

Did the bees steal an egg from another hive? I have heard it claimed this sometimes happens, but it seems to me almost incredible. The very thought of a bee going to another hive, stealing one egg, flying home with it and depositing it in a prepared queen cell taxes credulity. Besides, the egg I saw was standing on end, exactly as one finds an egg that a queen has laid.

Did a worker bee lay that egg? This, too, seems incredible. Laying workers normally scatter several eggs in a cell, not just one neatly positioned egg. And what would be the point of it anyway, since any such egg would only result in a drone? Besides that, it takes weeks for worker bees to become laying workers. So there seems to be nothing to recommend that theory.

I consulted Roger Morse on this, and he referred me to a paper published 50 years ago (Mackensen, *Journal of Economic Entomology*, 1943). The author cited experiments in which honey bees, especially certain races, do on rare occasion produce worker brood from unfertilized eggs. That is, it was found that clipped virgin queens can sometimes producea worker.

Now that is pretty surprising, in the light of what I always thought was one of the certainties of honey bee biology, that unfertilized eggs pro-

duce only drones. If we accept Mackensen's conclusion, that there are occasional exceptions, it is still a far cry from producing a *queen* from such an egg. Of course I have no proof that the egg I saw was going to turn into a queen but, it was in an especially made queen cell, which is in itself astonishing.

One could say that I was having some sort of pipe dream, except for this: A week or so later I found almost exactly the same thing in *another* of my nucs, the only difference being that this time there was a newly hatched larva in the bottom of an *especially constructed queen cell*, not a runt cell or a supercedure cell, and there was not a trace of any egg or unsealed brood anyplace else in that nuc!

They say that God sometimes works in mysterious ways. So does nature – although I think that these are two ways of saying essentially the same thing. Q

Find the capitalized words in the list in the puzzle below.

APIARY	HONEY	QUEEN
APIMONDIA	HYBRID bees	ROYAL jelly
BEE houses	LARVA	SKEPS
COLONY	METAMORPHOSIS	SMOKING
COMB	NECTAR	STING
DRONE	bee NEST	SWARM
GRAFTING	POLLEN	VENOM
HIVES	PUPA	WAX extractors

A	J	U	K	P	Q	Y	A	N	O	D	G	M
O	P	G	S	U	K	V	R	R	S	N	P	E
E	B	I	E	P	R	Y	Z	A	I	Z	U	T
O	N	E	M	A	E	O	L	T	I	I	T	A
Y	N	O	L	O	C	K	F	C	U	P	J	M
V	S	U	R	O	N	A	S	E	G	R	A	O
S	P	D	M	D	R	D	K	N	V	T	O	R
T	W	Q	W	G	D	H	I	V	E	S	V	P
I	H	A	S	I	R	K	S	A	B	E	D	H
N	X	P	R	H	O	V	C	O	N	N	B	O
G	P	B	N	M	Y	E	N	O	H	J	D	S
M	Y	O	S	O	A	T	M	I	M	B	O	I
H	V	J	N	E	L	L	O	P	L	B	U	S

QUESTIONS?

Treating Varroa

Q. Should we use Apistan strips as a preventive measure against mites, or should we wait until mites are discovered?

John A. Winter
Cincinnati, OH

A. I would wait until you have reason to think you have Varroa mites. If beekeepers around you have them, then you should assume they are in your hives too. And if they are in any hive of yours, you can assume they are in all your hives. Then use the strips. In my view, preventive measures should not be taken against *tracheal* mites. Instead, any winter losses resulting from these mites should be made up by taking combs of brood and bees from surviving colonies and giving them a new queen. And never, in any case, use any kind of pesticide or medication in any hive that has supers from which honey will be harvested.

Cleaning Up

Q. How do you clean the burr comb and propolis from the frames used in producing circular sections?

Duane Waid
Interlaken, NY

A. First, set the supers out near your apiary in the fall for the bees to lick dry. Then, come spring, all you need to do is scrape the dry burr comb from the tops and bottoms of the frames as you insert new rings and foundation. Any remaining residual wax and propolis can be disregarded.

Straighten Up!

Q. How does one keep the foundation in the center of the frame in producing cut comb honey? Since I cannot use wires, I sometimes find that the bees have built adjoining combs together or even, sometimes, have constructed burr combs between the frames.

Pat Morris
Newfield, NY

A. There are several ways of dealing with this problem. (1) Instead of using full sheets of foundation, even for shallow frames, you can use narrow strips at the top, and the bees will usually build their combs straight down from these; or (2) you can use just one wire and then, when you harvest the honey, heat that wire, using a transformer or electric embedder, and pull it out; or (3) you can insert metal support pins, somewhat resembling old-fashioned clothes pins, into the holes of the end bars. These are available from some of the bee supply companies.

Old to New

Q. I have a hive that was given to me three years ago and now consists of a full-depth hive body and five shallow supers, no queen excluder. How do I rebuild this hive? How do I know where the queen is? I am a novice.

Bob Marotte
Southington, CT

A. The easiest way to rebuild a hive like that, without having to find the queen, is to set the supers that have the least honey in them off to one side, give them a new bottom and top, and let whichever part is thus rendered queenless raise a new queen.

Editor's Note: To insure success, make sure that each part has several frames of eggs and brood.

Creamed Honey

Q. What is the secret of getting good creamed honey? Do the large packers add some secret ingredient that results in a consistent product no matter what the floral source is?

Bob Lyons
Pinchea Creek, Alberta, Canada

A. There are no secrets to making creamed honey, and large packers do not add any special ingredients. Usually a good creamed honey can be obtained simply by letting it granulate *quickly*. The faster granulation occurs – say, in ten days – the finer the crystals will be, and hence, the better the product. The process is greatly improved by stirring into the liquid honey about 10% finely granulated honey, then letting it set in a *cool room*. Honey granulates most rapidly, and hence best, at temperatures in the 50s(F). It granulates less nicely at temperatures either above *or below* that. Some honeys are difficult to turn into creamed honey – that is, difficult to granulate – no matter what. This is most apt to be true of honey from trees, for example, basswood. Other honeys, such as goldenrod, aster and rape, granulate very rapidly in a cool place. So the "secret" is to begin with fast-granulating honey, thoroughly mix (or "seed" it) with finely granulated honey saved for that purpose, and put it in a cool room, preferably on the floor.

Darwin Wins

Q. How does the fact that a bee dies after losing its sting fit in with the theory of natural selection? Would it not be more consistent with that theory for such bees to survive?

Mani Omiel
Big Pine Key, FL

A. Not really. First of all, the worker bees are not the ones that reproduce. More important, the numbers of bees that perish in this way are insignificant in relation to the total population of the colony. The death of a few, or even many, worker bees due to stinging has no effect on the survivability of the bees as a species.

Questions are welcome. Address Dr. Richard Taylor, Box 352, Interlaken, NY 14847, enclosing a stamped envelope.

ANSWERS!

Richard Taylor

?Do You Know? Answers

1. **False** There are actually four pairs of wax glands located internally within the abdomen with the wax flakes forming on the ventral surface of the abdomen.
2. **False** The dusty appearance that forms on beeswax is called "bloom" and is easily wiped off. It results from the migration of waxes of a lower melting point to the surface. Blooms melt at 102°F whereas beeswax melts at approximately 145°F.
3. **True** Beeswax has many distinctive characteristics and practical applications related to its physical properties. Beeswax candles are preferred by many because they burn slowly without smoking, drip less, produce a bright light and have a mild, sweet scent.
4. **False** The Dyce method is a technique used in making finely crystallized or creamed honey.
5. **False** Generally a light, mild honey produces a honey wine which is more appealing (pleasing to look at, delicate, tasty) than does a dark, strong honey. Even if a dark honey is used, non-table grade honeys would not be considered.
6. **True** Honey wines made with darker honeys will naturally ferment more rapidly than those made with lighter honeys. Dark honeys are richer in minerals and vitamins which are needed by the yeasts for rapid growth.
7. **True** Beeswax must vaporize to burn. In candles, capillary action causes the liquid wax to travel up the wicking and burn gradually. The reason the flame does not burn farther down the wick is that the cooler liquid wax extinguishes it before the liquid wax is hot enough to vaporize.
8. **True** Beeswax shrinks about 10 per cent when it cools from a liquid to a solid and this often causes cracks to form especially if the wax cools too quickly.
9. **True** Honey is hygroscopic, which means it will pick up moisture if stored in a humid environment and lose moisture if in a dry situation. Even comb honey will pick up moisture and possibly ferment if stored in a moist environment. The wax cappings over cells are not perfect seals. Water can move through the cappings with ease.
10. D) 65-70° F
11. B) 10-12%
12. Creamed honey will keep almost indefinitely.
    Creamed honey is easier to use since it spreads; easily spread without making a sticky mess. It is difficult to remove liquid honey from the standard glass container without loosing strands of the viscous material.
13. Propolis is of plant origin, collected by foragers and brought into the hive. It is collected from a fairly large number of woody plants, parts of which (particularly leaf buds) have a sticky surface coating.
    Royal jelly is a glandular secretion produced by worker nurse bees. It is a white, milky secretion from the hypopharyngeal and mandibular glands.
14. A) The hydrometer is an instrument used to measure the sugar content of the honey/water mixture and the alcohol (indirectly) and sugar content of the final product.
    B) Campden tablets are used to purify the honey/water mixture (kill any foreign yeasts present that might give the wine an off-flavor). The tablets release sulfur dioxide which kills unwanted micro-organisms without killing the wine yeasts and reducing the quality of the mead.
    C) The fermentation lock permits gases to escape and prevents foreign yeasts and oxygen from entering the fermentation chamber.
    D) Betonite removes the cloudiness from the finished mead.
    E) Ammonium phosphate and urea are yeast nutrients. While sugar is the chief food for the yeast cell, yeasts also need certain vitamins, minerals and other nutrients to grow just like other living organisms. Honey is not a rich source of these materials and contains even less when honey is diluted, thus the addition of nutrients is necessary for a fast fermentation.
    F) Fermentation is a biological process accomplished by living yeast cells. The yeast cells feed on the sugar in the mixture using about five percent for their own metabolism and the rest is turned, about equally, into carbon dioxide and alcohol (yeast cell waste products).
15. The "must" is the unfermented or fermenting mixture (honey/water + fruit juices if desired) used in the making of wine (mead).
    Racking is the process in which the liquid portion of the fermenting mixture is siphoned away from the sediment (dead yeast cells) in the bottom of the chamber. This is necessary when fermentation is completed to prevent the sediment from ruining the flavor of the wine. (To drain wine from the dregs).
16. Ripples on the side of dipped beeswax candles results from removing the candle too quickly from the wax or the wax not cooling evenly because of a draft.
17. Air bubbles or white patches under the last coating of wax happens when the wax does not bond to the previous coat. These often appear after an extended break in the dipping process, resulting in the candle being cooler when dipping resumes.

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

Gleanings

August, 1993 ALL THE NEWS THAT FITS

AHB on the Move

More Counties Quarantined, First Death Reported

Five counties were added to the Texas Quarantine Counties during the month of June, 1993. They are Presidio, Austin, DeWitt, Gonzales and Lavaca. The last four counties are located on the east side of Texas and Presidio County is in the west. The additions makes 57 counties under quarantine.

On June 9, 1993, a colony of Africanized honey bees was detected in a 55 gallon drum near the dry dock area on Pinto Island in the Port of Mobile, Alabama. Workers at the site stated seeing bee activity coming from the drum over a year ago. The 55 gallon drum was full of comb and honey and the appearance and color of the honey comb indicated it was over a year old.

A colony of Africanized honey bees located within the ceiling and roof of an adobe home in Tucson, Arizona, was destroyed and sampled on June 18, 1993. The colony became agitated when the owner of the house began to bathe her small dog. She was chased into the house and by the time her son was able to help her the dog had received 200 stings. It died by the time they reached the veterinarian. The veterinarian counted the stings and pulled 97 bees from the dog's hair. Those bees were sent to the Arizona Identification Laboratory. It was estimated the AHB colony had been in the house two to three months. Personnel from the Arizona Department of Agriculture placed 74 traps within a four square mile area. No colony samplings have taken place as of June 30, 1993.

Continued on Next Page

Ban Lifted?

CANADA VOTES FOR U.S. BEES

B.C. Agriculture Ministry's chief apiculturalist strongly opposes a federal government proposal to lift the six-year-old ban on bee imports from the United States.

Paul van Westendrop said if the ban is ended it is sure to speed arrival of the Africanized bees in B.C. and the rest of Canada.

He said federal government has made the proposal despite widespread opposition from beekeepers and provincial authorities.

"Opening the border would eliminate the chance of keeping Africanized honey bees out of Canada", van Westendorp said.

He said one of the biggest concerns about the Africanized bees is the negative publicity that follows them.

Insurance rates for beekeepers would likely rocket and the industry might be considered a public hazard because of the fear of the bees.

In some areas of the U.S. where the bees are present, beekeeping has been banned, he said.

He said the fear is that it could happen in British Columbia, affecting the honey industry and

Continued on Next Page

Children at Risk

NAS STUDY POINTS OUT INADEQUACIES; HONEY NOT MENTIONED

As so often is the case on touchy issues, official Washington reacted with a flurry of activity in the wake of the National Academy of Sciences report on pesticides in our diet. Ag Secretary Espy, EPA Administrator Carol Browner, and Food and Drug Administration Commissioner David Kessler jointly vowed to be "vigilant in our efforts to maintain that (food) safety (is) based on the best available science." Browner went to the National press Club and outlined a series of steps EPA will take to monitor residues in children's food more carefully. A panel of scientists went before the Senate Ag Committee and concluded that infants and children may be harmed by the current legal pesticide residue limits.

Only faintly heard were caution signals that production agriculture might also be at risk. Sen. Edward Kennedy (D-MA) and Rep. Henry Waxman (D-CA) said pesticide residue health risks must be negligible and no pesticide benefits should be weighed in the decision-making balance. Pesticide industry officials were conciliatory, but Natural Resource Defense Council attorney Al Meyerhoff said the report "adds fuel to the fire for national pesticide reform."

Expenses Covered

VOCA NEEDS LOTS OF BEEKEEPING VOLUNTEERS

WANTED: Experienced beekeeping, honey product processing and marketing specialists for trips to the former Soviet Union, Eastern Europe, Latin America.

Volunteers in Overseas Cooperative Assistance (VOCA) offers unique and exciting opportunities for international service – making use of specialists in all aspects of agriculture and agribusiness development to carry out short-term, voluntary assignments abroad.

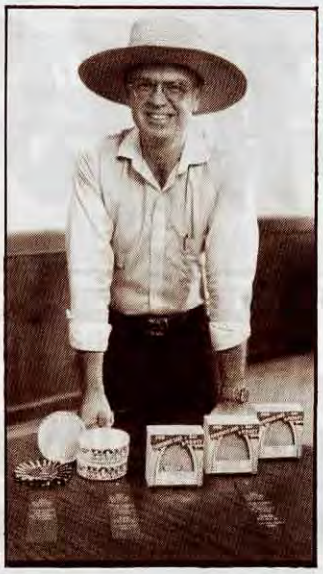
VOCA is a private non-profit organization whose mission is to increase the economic opportunities and incomes of members of agriculturally based enterprises in lesser developed countries. They send volunteers – who are farmers, food processing specialists, veterinarians, extension agents, and agribusiness and cooperative executives – to provide short-term, specialized technical assistance directly to the groups who have requested our help. Our programs are people-to-people: U.S. volunteer agriculturalists working one-on-one with their foreign counterparts.

Continued on Page 465

BEST OF SHOW IN GA

The 1993 Beekeeping Institute sponsored by Young Harris College and The University of Georgia drew 107 beekeepers from three states for two days of fun, fellowship, and educational activities. A diverse curriculum let students choose workshops ranging from package bee installation to honey/pollen identification.

The 1993 Beekeeping Institute Honey Show drew 44 entries of bottled honey, chunk honey, section comb honey, and beeswax. Dennis Graney of Lexington, Georgia won first and second place for his entries in section comb honey. Mr. Graney's round section comb honey won Overall Best of Show. Judge for the Honey Show was Dr. John Skinner of the University of Tennessee.



Flood A Disaster For Crops

SEC. OF AG. ESPY FLOATS LOAN

Mike Espy spent June 30 flying to water logged farms in Iowa, Wisconsin, Minnesota, and South Dakota in an effort to assess potential losses and to "help determine our best response to this devastation." Before leaving Washington, Espy said, "I am deeply concerned about the impact heavy rains have had on farming operations. I want to meet with farmers who have been unable to plant or whose crops have failed because of excessive rains and discuss problems they face."

Secretary Espy's initial comment upon viewing the situation in Iowa and Wisconsin was: "We've covered two states now, and I've seen pools of water where crops should be – we have to decide whether we can declare an economic emergency. If that's the case, then there are a lot of things I can do with regards to advance payments and other options . . I saw a lot of stunted growth There's no production by farmers going on right now."

Iowa Secretary of Agriculture Dale Cochran is hopeful some type of assistance will be forthcoming. Cochran says that Espy is "personally for assisting farmers when these types of situations occur, and he supports disaster assistance." Compared with past secretaries, Cochran says, Espy is "farmer-friendly" and "will do what he can to help farmers."

CANADA ... Cont. From Pg. 463

orchardists who depend on honey bees to pollinate their trees.

British Columbia has already had one close, and unpublicized, call with the bees when a nest of Africanized honey bees arrived in Vancouver in 1991 aboard a ship from Guatemala, he said. It was found and destroyed before the bees could spread.

A spokesman for the federal Agriculture Department said a final decision has still not been made on whether to lift the import ban. Beekeepers had until the end of July to comment.

New Products

IN STORES

Latest statistics show that 16,000 new food products were introduced in our nation's retail stores in 1991, a 22% increase over 1990, and double the rate of seven years ago. The largest category of new foods introduced in 1991 was condiments, 2,787 new items. The second largest category ws candy, snacks and gum at 1,885 new products. Bakery foods were third at 1,631. Studies show that most new products, up to 90%, are extensions of existing lines rather than new breakthrough foods. The growth occurred despite the recession and food sales rising less than food prices.

Extension Publications

BOOKLET AVAILABLE

Dr. James E. Tew, Extension Service, United States Department of Agriculture has compiled a listing of state beekeeping publications that are available across the United States. The list of 260 publications are cross referenced in a Table of Contents. Addresses and prices are included with each citation listing. The list is current through February, 1992. To receive a copy of the catalog, send $5.00 to: Ms. Sharron Ferrell, OSU Extension Bee Lab, OARDC/Dept. of Entomology, 1680 Madison Ave., Wooster, OH 44691.

Honey Not Alone

MEAT IMPORTS HURT U.S. PRODUCERS

Australia and New Zealand signed voluntary restraint agreements to limit shipments of meat during the year. The U.S. Meat Import Act places a limit of 1.2 billion pounds for 1993. Imports are expected to total just 100,000 pounds less than that amount, preventing an import quota from being imposed. Australia and NZ are the largest foreign suppliers of fresh beef to U.S. market, supplying 90% of imports subject to the Meat Import Act.

Meanwhile, U.S. cattle inventory is forecast to continue a modest herd expansion that began in 1989. Slow rebuilding of inventory will result in small increases in beef production. Nevertheless the growth will not offset population increases and export demand for beef, therefore per capita beef consumption will slip slightly. As weather conditions improve, fed cattle marketings will increase, and with supplies of pork and poultry growing, cattle prices are likely to decline in the second and third quarters of this year.

LAND VALUES INCREASE

How much is your land worth per acre? It depends on where you live. Average farm real estate values last year ranged from $138 per acre in WY to $4,774 per acre in NJ. The value of U.S. farmland has increased an average of 2.4 percent per year the last five years. The area in farmland has fallen each year, from 1.2 billion acres in 1950 to 0.9 billion in 1992. The number of farms has declined each year, from 5.6 million in 1950 to 2.1 million last year.

AHB ON THE MOVE ... Cont. From Pg. 463

The first human death in the United States attributed to the Africanized Honey Bee occurred on July 15, 1993, in Starr County, 30 miles north of Rio Grande City, Texas. Mr. Lino Lopez, an 82 year old rancher tried to destroy a colony of bees that had become established in the walls of his ranch house when the bees attacked. Apparently he used a torch like instrument soaked with gasoline and when he introduced the gasoline soaked rag into the wall opening the bees became defensive and attacked. He received about 90 stings. Mr. Lopez was taken to a local hospital where he was pronounced dead at 14:50.

The colony was destroyed by a Texas Apiary Inspector and samples were sent to the Agricultural Research Service (ARS) Weslaco laboratory, Animal and Plant Health Inspection Service (APHIS) Harlingen laboratory and ARS Beltsville laboratory for identification.

Elba Quintero
AHB Program Coordinator

HONEY BOARD NEWS

Honey Month September was declared National Honey Month by Mike Espy, U.S. Secretary of Agriculture.

National Honey Month press kits are available for beekeepers from the National Honey Board. Share the good news about honey with your local newspapers, radio and television stations. Order your Honey Month press kit today from Tracy Baker, National Honey Board, 421 21st Ave. #203, Longmont, CO 80513.

Recipes Available The National Honey Board has developed new bulk honey recipes for restaurants. The recipes are printed on cards with full-color photos.

Each card features recipe ideas for serving honey at breakfast, lunch and dinner. A family-style restaurant that serves pancakes, cereals and fruit platters can try the honey toppings – Honey & Spice Blueberry Syrup and Honey Lemon Yogurt Sauce. If the restaurant specializes in fast food, Honeyed Sweet & Sour Sauce and Zesty Honey Tomato Sauce will add flair to chicken nuggets and other poultry, shrimp and pork dishes. For fine dining establishments, Honey Cumin Glaze and Honey Almond Caramel Sauce will lend a golden touch to elegant dishes.

Recipe cards are available on request from the National Honey Board.

Logo Available The National Honey Board is now making its lovable honey bear logo available to honey packers. With the new labeling guidelines, many of you will be designing new honey labels – what an opportune time to add the bear to your honey jar. The National Honey Board has implemented promotions as well as advertising in national consumer magazines to increase awareness of the honey bear logo. The familiar honey bear image has earned a warm spot in consumers' hearts – it tells them that your honey jar is packed with wholesome good taste!

Write to the Honey Board to receive your application today. Upon approval, you will receive honey bear camera-ready artwork and permission to use the honey bear on your honey containers.

VOLUNTEERS ... Cont. From Pg. 463

They are currently providing a volunteer in Primoskiy Krai (Vladivostok), Russia to assist the local Interdistrict Farm Association. The volunteer will review current beekeeping practices and marketing efforts. This is an important honey producing area which has been closed to foreigners until 1991.

Projects range in length from two to 12 weeks. Most are for less than six weeks. VOCA is responsible for all logistical arrangements and expenses including travel and living costs. Interpreters are provided. Volunteers contribute their time and expertise.

In 1993, VOCA needs more than 500 volunteers to serve in nearly 50 countries. If you are interested in learning more about becoming a VOCA volunteer please call (800) 929-8622.

Researchers Encouraged

REDUCED PESTICIDE USE

Agricultural researchers at Ohio State University are encouraged by a National Academy of Sciences Report calling for more research on pesticides, especially those used on fruits and vegetables. More research on alternatives and more funding to implement them is exactly what is needed, say faculty and staff involved in the university's Integrated Pest Management (IPM) and related programs

"We just don't know a lot about what to recommend for many of these crops", says Celeste Welty, an entomologist who has taken the lead on the fruit and vegetable IPM programs in the state. IPM is a management system that relies on an understanding of pests' life cycles and their interactions with the environment. Farmers and other trained scouts examine crops for early signs of insects or disease, and farmers use chemical pesticides only when alternative treatments cannot prevent extensive damage.

The NAS report emphasized that too little is known about how pesticide residues on foods might affect the health of infants and children. Fruits and vegetables have taken the spotlight because children are encourage to eat so many of them.

Coinciding with the report was a Clinton administration announcement that the Department of Agriculture, the Environmental Protection Agency and the Food and Drug Administration will work together to decrease use of pesticides in the production of all food crops. That will take a lot of work, especially on fruits and vegetables, Welty says.

Each crop is threatened by a different set of pests, and each pest is different in terms of how it might damage the crop. So, each crop and each of the crop's pests may need a different control method, Welty says. That's a lot different than all-purpose insecticides that farmers had grown accustomed to using.

"The amount of pesticides farmers use is going down", says fruit specialist Dick Funt. 'Growers are thinking of alternative practices and look favorably on reduction of pesticide application if it's proven the quality of the product is the same in the end."

With apples in particular, disease-resistant cultivars are rapidly growing in popularity, and Funt anticipates great strides being made in pest-and disease-resistance in the next five years.

"It's phenomenal what can be done and how far we've come", Funt says. "Five years ago we had the Alar scare, which I consider a high-water mark of the public saying 'We don't want pesticides' and agriculturists saying 'We can't live without them.' Since then, we've come a long way in philosophies, with a change of techniques, and in promising possibilities."

Food Safety

IDENTIFYING CONSUMERS' WORRIES

Consumers are increasingly concerned about food safety, according to a poll commissioned by CMF&Z Public Relations, a Des Moines-based PR unit, and conducted among newspaper editors who cover food-safety issues. These respondents cite bacteria in food as chief among American consumers' food-safety worries, with pesticides and drug residues as close runners-up. Farther down on the list of concerns, from the media perspective, are food irradiation and genetic engineering. How do food companies' safety efforts rate? While 49% of respondents rank companies as "average" in that respect, 40% say they're generally "good" or "excellent" The survey found safety issues tend to be covered by food or lifestyle editors rather than by editors who cover agribusiness and technology. As such, suggest CMF&Z, these editors approach food-safety stories from a consumer perspective and aren't necessarily conversant with food-industry concerns – which means the industry must work harder to get its side of the story into print.

Save African Bee

GOVERNMENT ACTS IN SOUTH AFRICA

While American beekeepers worry about the invasion of African bees, South African beekeepers are worried about their destruction. A Durban, South Africa newspaper reports that commercial beekeeping in the northern part of South Africa is threatened by a grave menace to the African bees.

This threat to beekeeping in South Africa sounds familiar to American beekeepers. The beekeepers themselves will suffer the financial loss of the crops of honey and beeswax; South African farmers will incur losses as great as 700 million Rand (2 Rand = $1.) because the bees will not be available to pollinate their cash crops.

Local beekeepers are calling this the "capensis calamity". How did this calamity happen? The Cape Honey bee, *apis mellifera capensis*, is indigenous to the southern tip of Africa. It has been confined to this area and separated from the African bees by the natural barriers of the Karoo Plateau Region, the Drakensburg Mountains and the Kalahari Desert. About 1990 beekeepers moved hives across these natural barriers and in less than two years Cape bees have infested African colonies and threatened their survival.

The singular trait of the Cape Bee that sets it apart from all other honey bees is that the Cape worker bee is capable of producing fertile workers. When Cape workers occupy African hives, they produce "pseudo-queens" which supplant the legitimate African queen. These "pseudo-queens" give strong chemical scents which disrupt the regular social life of the colony. Fights break out, the colonies become queenless and die.

The South African Department of Agriculture has reacted with strong measures: all colonies in the north infested with Cape bees must be destroyed; no bees may be moved in or out of designated districts without permits; financial assistance has been provided to establish new colonies.

Food Facts Coalition

NATIONAL FARMERS JOIN

The National Farmers' Organization recently joined Food Facts Coalition, an agriculture industry group educating consumers about the production, processing, distribution and nutritional value of human food.

"We joined Food Facts Coalition because we are concerned that consumers have accurate information about the food they eat," says Steve Halloran, National Farmers President.

"We want to educate consumers on the healthful benefits of eating foods such as red meat," he explains. "It seems that too much of the public is accepting extremist views or are just plain confused by so much conflicting dietary research information."

Halloran stresses that National Farmers will not necessarily endorse all of Food Facts Coalition's claims. However, we'll be comfortable within the coalition helping disseminate the facts about most controversial food issues.

"We feel the collective voices of the organizations in the coalition give more validity to proper nutritional information," he says. "People can't eat right unless they know what's right."

Joining National Farmers in Food Facts Coalition are: American Society of Animal Science, American Feed Industry Association, American Meat Institute, American Farm Bureau Federation, Livestock Marketing Association, National Live Stock and Meat Board, National Cattlemen's Association, National Milk Producers Federation, American National CattleWomen, Animal Industry Foundation, American Meat Science Association, American Dairy Science Association and Federation of American Societies of Food Animal Sciences.

HONEY MERGES WITH GARLIC

Honey has merged with garlic in some new spreads and dressings which feature the honey bear logo.

Bull's Gourmet Foods, Ellensburg, WA, has qualified to use the honey bear logo on two of its products, Garlic Honey Blend and Garlic Honey Blend Gourmet Spread.

Bull's, in business since 1985, makes 11 condiment products – ranging from pepper jelly to pickled garlic. Owner Jack Bull retired from a career in farming and began concocting edibles in his kitchen as a hobby. Bull set up a booth at the Ellensburg Rodeo – an annual event attended by people from all over the Pacific Northwest. The response to Bull's products was phenomenal and the business has been growing ever since.

"It may be hard for people to imagine the flavors of garlic and honey together, but if we can get people to try it, they like it," said Fresa Hatch, general manager for Bull's.

Garlic Honey Blend is used as a glaze or sauce base; Garlic Honey Blend Gourmet Spread, which is whipped and goes lighter on the garlic, is for use on breads and hot meats. The products contain only garlic and honey, with no artificial preservatives or color.

Hatch says the company's goal is to see Garlic Honey Blend products become a pantry staple, like ketchup or mayonnaise. "With consumers' growing taste for spicy/hot combinations, we have a good shot at meeting that goal."

"We received a mailing from the Honey Board about the honey bear logo," said Hatch. "We felt the logo would be an excellent way to help bring our products into the national scope."

Bull's will soon be going international according to Hatch. "The Sultan of Oman tried some of our Honey Garlic Spread at a hotel in New York," said Hatch."When he went back to Oman, he started buying several cases at a time from the hotel. One afternoon the Sultan served Garlic Honey Spread to a guest at tea. As it turns out, that guest owns a chain of grocery stores in Oman – he recently placed an order for several thousand cases of our product. It knocked us all off our feet!"

Like Bull's, Sara's Food Products, Millbrae, CA, has discovered the magic combination of honey and garlic. Sara's Honey and Garlic Salad Dressings in Original, Dijon and Tarragon varieties, have all qualified to use the honey bear logo.

Sara's was started in 1991 by Robyn Diehl and her daughters Perrie and Sara. At age ten, Perrie began making salad dressings for the family because she didn't like the ones from the grocery store. "One night I threw a clove of garlic into the blender of Perrie's dressing and the result was something really special," said Robyn Diehl. Diehl began making and bottling the dressing out of her home to share with friends. "A bottle of our dressing made its way to a picnic which a food distributor happened to be attending – he fell in love with it and Sara's Food Products was born." (Though Sara lives in another part of the state, the family wanted to include her in the company some way, hence the company name.)

Diehl said she wanted to use the Honey Board's honey bear logo to reinforce the fact her products use a high amount of honey. "People just like honey, it's a pure and natural food," stated Diehl. "Many people don't like corn syrup, which is in most store-bought dressings."

Sara's dressings can be found in health food stores in 15 western U.S. states as well as Lunardi's grocery chain in the San Francisco Bay Area. Robyn has started to get requests from all over the country and she is happy to ship special orders.

"In addition to being a business venture, Sara's Food Products has been a learning experience for my daughter Perrie," Diehl said. "She meets with company executives and does product demonstrations along with me. She's gaining a lot of knowledge about business and entrepreneurship." Diehl also said Perrie was invited to speak about the family business at an assembly at her high school and the school sponsored a student field trip to watch Sara's dressings being bottled. "It's really been good for Perrie's self-esteem too," said Diehl. Robyn Diehl feels great pride in the company as well – she related the response of one of her customers: 'This is the best bottled dressing I've ever tasted – I love it so much, my wife put two jars for me under the Christmas tree!'

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PERIODICALS

RURAL HERITAGE a quarterly how-to magazine, established in 1975, dedicated to preserving the traditional rural lifestyle. Subscription $16.00, sample $5.50 (outside USA, subscription US$20.00, sample US$6.00). RURAL HERITAGE, 281-B Dean Ridge Lane, Gainesboro, TN 38562-9685.

WANT INFORMATION ON EXOTIC animals and the marketplace? Subscribe to Wings & Hooves. $19 yr/U.S., $25 yr/Canada. $35/yr/others. $3.00 for sample. Dept. 1, Rt. 3, Box 65, Chandler, OK 74834.

THE SCOTTISH BEEKEEPER. Magazine of The Scottish Beekeepers' Assoc. Rates from D. B. N. Blair, 44 Dalhousie Rd., Kilbarchan, Renfrewshire, PA10 2AT, Scotland, U.K. Sample on request, $1.

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

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SCOTTISH BEE JOURNAL. Monthly magazine. Sample copy from Robert NH Skilling, FRSA, 34 Rennie St., Kilmarnock, Scotland. $4.00 per annum.

BEEKEEPING. The West of England bee journal. Subscription £7.75 (payable in £Sterling) (or £10.50 air mail) (£9.25 for subscribers in other countries) for 10 issues. Subscription Secretary, Mrs. J. Gant, Leat Orchard, Grange Road, Buckfast, Buckfastleigh, Devon.

BEE CRAFT — Monthly journal of the British Beekeepers Association. Subscription, including postage is £12.96 surface mail to Mr. L. Connor, P. O. 817, Chesire, CT 06410, USA.

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THE AUSTRALASIAN BEEKEEPER. Published monthly by Pender Beekeeping Supplies Pty. Ltd. Send request to: The Australasian Beekeeper, PMB 19, Maitland NSW 2320, Australia. Subscription $US 27.00 per annum, Surface Mail (in advance). Payment by Bank Draft. Sample copy free on request.

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BOTTOM ... Cont. From Pg. 472

classes, talking, looking for their books, waiting for breakfast. All under the giant fig tree.

As a teenager Louie had been a reluctant helper when his parents worked their bees. Now he wished he had paid more attention. He had no protective clothing. Did he need a smoker? What was he going to put them in?

He thought about his family farm more than six thousand miles away. What would his father have done? And why hadn't he watched his dad more carefully? But back then his mind had been filled with thoughts of girls, cars, and football games. Not beekeeping.

And the menacing ball still hung in the fig tree.

This was Africa. It was hot. Louie didn't even have a long-sleeved shirt. Cardboard boxes were scarce items, let alone anything resembling a smoker.

Time was passing. The student-fathers gathered around the tree, waiting for "the boss" to do something. To save them and their families from the Dangerous Thing.

Louie came back to the house and awoke our two sons. He knew he would need help. In the humid darkness they scoured the campus for a suitable cardboard box. Driving up under the fig tree, with only the headlights for light, one of the boys held the box open while Louie gritted his teeth and gingerly shook the bee ball.

By now the entire population of the married-students' housing nervously encircled the tree. A cheer went up as the bees fell into the carton. Louie put on the lid, placed the box in the trunk of the Volkswagen Beetle and, with a flourish, drove off.

The rest was easy a short drive into the forest, finding an appropriate stump along the side of the road, and placing the box of bees back where they belonged. Then back home to sleep through the rest of the sweltering night. In the languid tropics, where nothing ever happened.

We have many memories of our stay in Africa. Now, twenty years later, every time we spread a spoonful of golden honey on our toast we remember our steamy night with the dreaded african bees, known to us then, and now, by their more gentle name the butterflies that make sugar.

Display Index

Butterflies That Make Sugar

nell geissel

Do you know the French word for honey bee? Possibly. But how do you say it in Swahili? Or, even more obscure, Lingala, the language of the people who live along the banks of the Zaire (Congo) River? One muggy midnight, in the exact center of Africa, we discovered our lack, in any language, of the vocabulary for the flora and fauna of the country where we were living.

As Technical Services Director of a small African university, my husband was responsible for all of the physical aspects of the university. From auto breakdowns, to the president locking himself out of his house, to building coffins, the director took care of it all.

We were used to unusual happenings in the middle of the night. Emergencies occurred around the clock and we were often awakened by a polite voice saying, "Boss. Boss, we need help!" at our open bedroom window. But this night was a puzzler.

Three anxious young men waited in our living room while my husband dressed. Our conversation was limited. French was our second language, and at least the third one of the students spoke.

Would they like some coffee while they waited?

No. They said they were much too worried to be able to drink.

Would they sit down?

No. They were in a hurry.

When Louie, my husband, finally arrived they declared something bad was happening in the married-student housing. Something dangerous.

"Where?" asked Louie.

In a tree. In the old fig tree. A very dangerous thing was in the tree.

"Is it a leopard?"

"No."

"Is it a monkey?"

"No."

Twenty questions continued. "What about a snake?"

They shook their heads. No. And our vocabulary of French animal names was exhausted.

"Is it alive?" asked Louie.

They nodded happily. Yes, Yes. It was alive.

"How big is it?"

One of the students held out his arms in a big ball size. "We have to hurry" he said. "It's a very dangerous thing."

Louie was still sleepy. And grumpy.

"I'm not going anywhere" he said, "until we find out what this dangerous thing is. HOW is it dangerous? What does it do?"

"It bites." was the answer.

Something that was not an animal or a reptile, but bit. Louie sat down and put his head in his hands.

The three students retired to a corner. Using French, Swahili, Lingala, a smattering of English, and sign language, they conferred. The translating committee triumphantly returned. Proudly they announced in French, "Des papillons qui font du sucre."

Butterflies that make sugar. Honey bees.

The dreaded African Bees!

Louie went with them. The Africans have a healthy and well-deserved respect for the natural occurrences around them. If the students said the bees were dangerous, he knew they were. And in the middle of Africa, with no equipment, how could he remove them?

At dawn student housing would burst into activity. Though the students and their wives and children slept inside, most of their lives were spent outdoors, in their yards, on the hard-packed, red earth surrounding their little brick houses. Under the fig tree with its swarm of bees.

In a short time mothers would be cooking over their fires while their children played underfoot. The fathers would be getting ready for their

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BOTTOM·BOARD