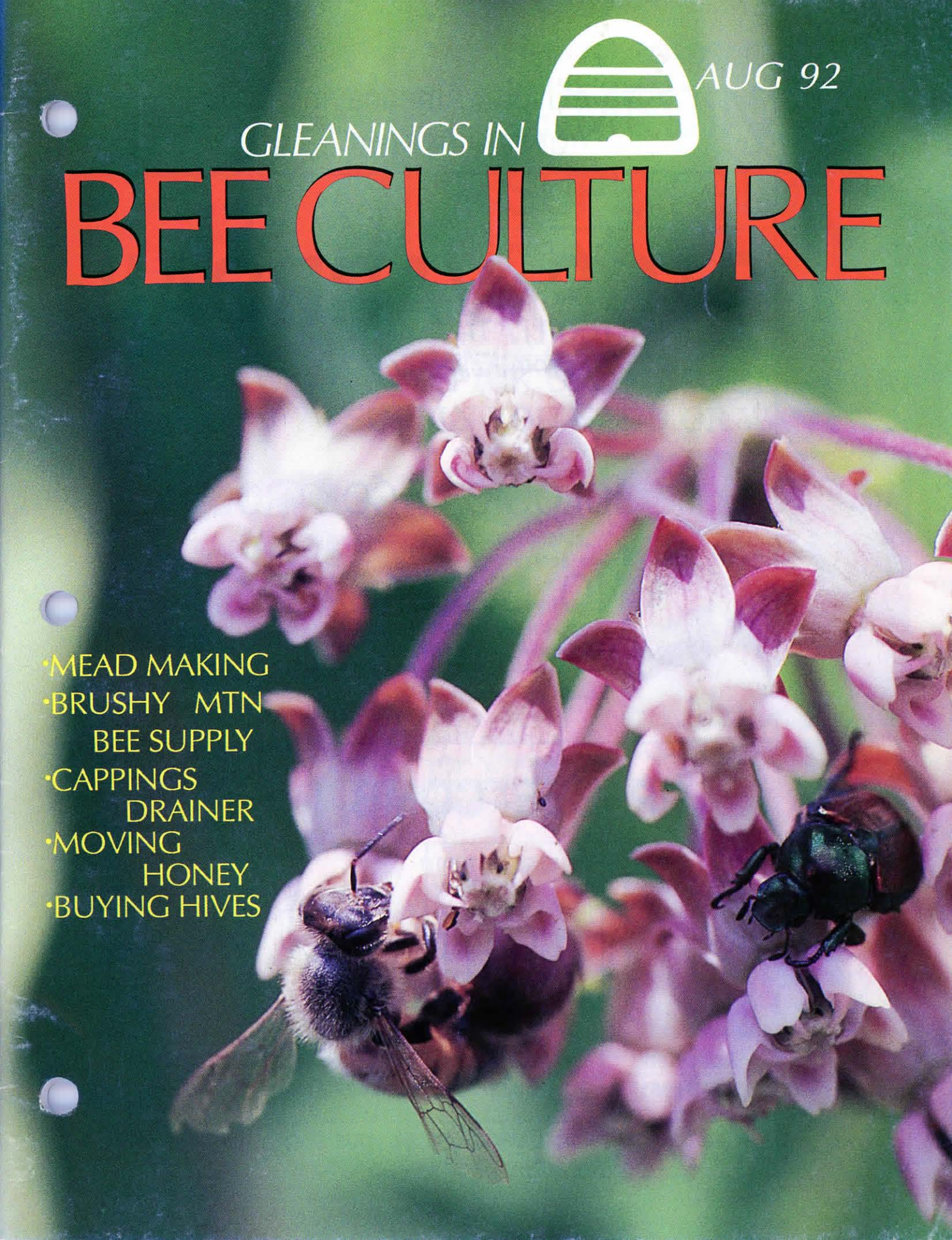
AUG 92

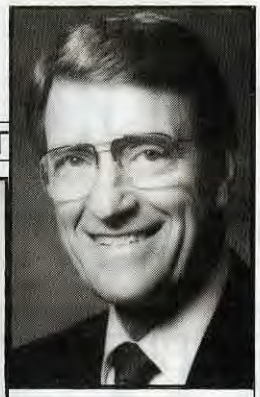
GLEANINGS IN BEE CULTURE

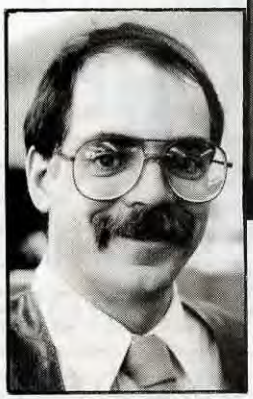


- MEAD MAKING
- BRUSHY MTN BEE SUPPLY
- CAPPINGS DRAINER
- MOVING HONEY
- BUYING HIVES

ROOT PUBLISHING

JOHN ROOT





KIM FLOTTUM

THE A. I. ROOT CO., Publishers
623 W. LIBERTY STREET
MEDINA, OHIO 44256

SUBSCRIPTION RATES: United States, one year, $14.40; two years, $27.00. **Newsstand Price: $1.95.** All other countries (U.S. Currency only), $7.50 per year additional for postage. Published monthly. Change of Address: Return completed form inside issue. Articles are solicited. *Opinions expressed by the authors are not necessarily those of the publishers.*

Advertising: For Display advertising information contact our office at 216-725-6677 Ext. 220.

POSTMASTER: Please send form 3579 to: The A. I. Root Co., 623 W. Liberty St., Medina, OH 44256. Tele. 216-725-6677.

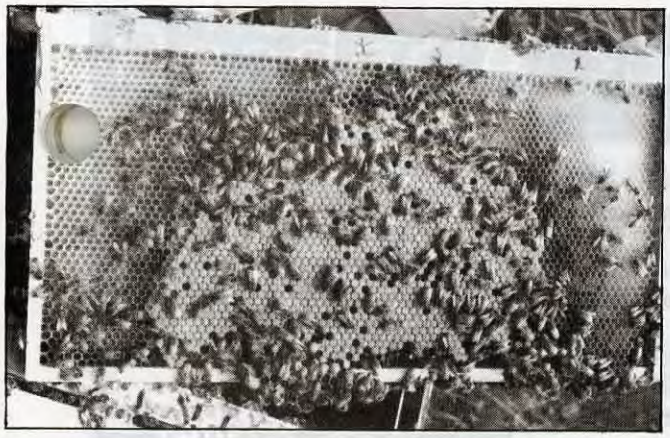
Circulation Figures reviewed by Deloitte & Touche. CPAs.

Columns

Departments

COVER ... *Milkweeds provide a wonderful and ample nectar source in mid to late summer. But more than honey bees take advantage of this bounty. A Japanese beetle was jealously guarding this bloom, aggressively repelling any other visitors. The beetle and the bee battled as I snapped several photos, but the beetle eventually won, and the honey bee left, looking for a less hostile lunch.*

Photo by Kim Flottum



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(ISSN 0017-114X) Vol. 120, No. 8

119 Years Continuous Publication by the Same Organization

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INNER·COVER

We spent a part of the July fourth weekend packing honey in the kitchen, our one-or-two-day-a-year packing facility. It gets extracted in the garage, strained and put in 60's. Then inside to bottle.

We're careful in the kitchen. Honey, wax and propolis can make a mess unbelievable, to be avoided at all costs, and by all means. But we weren't quite perfect that hot and sticky Friday.

We set each sixty, equipped with one of those big, cumbersome plastic gates, on the counter with the gate over the sink. That way spills go down the drain – not on the counter, the floor or anywhere else. And, any drips on jars can be quickly rinsed off – no muss, no fuss, no bother.

I guess we went through seven or eight pails that day – mostly half pounders, bears, eight oz. jelly glasses, quart jars and fives for storage. It all went pretty smooth once a rhythm was set up. Not a bad way to spend time, especially with friends or family and some good music in the background.

But, and there always seems to be a but whenever beekeeping and kitchens cross, we weren't quite perfect. It didn't get noticed right away though. Not until later, when everything was done and put away. When we thought we were safe, and were smug in our accomplishments and proud of the boxes and boxes stacked in the corner.

It wasn't until later the trouble began. It wasn't until those little bits and pieces of propolis first came to light. They had hidden themselves in the smallest of places, secreted away unnoticed, uncleaned. And we were unaware.

The marriage of propolis and hot water is an unholy thing. The result is a slimy, alien goo, and even the tiniest speck spreads and smears and leaves unclean all it touches. It clings with a life of its own, and when wiped away leaves more than was there in the first place, it seems. Soap doesn't work, more hot water doesn't move it either, nor does any or all the usual household clean-it-in-a-bottle compounds I had at the ready. Nothing could make it go away.

This alien substance appeared when I did dishes late that fateful Friday. And it appeared on the dishes I did. They came out of the sink, out of the bubbly brew worse than they went in. Smeared on the bottoms and the sides, wedged in fork tines and stuck on the handles of pots and pans. It was insidious. It was everywhere. It was a nightmare.

Kitchens and beekeeping seldom mix. Keep it clean (the kitchen, that is) and be very, very careful of those innocent brown and orange and yellow specks that so easily go unnoticed.

•

There was supposed to be more inside this month than there is. Well, that's not quite correct. Actually, there was supposed to be a couple stories included that aren't. We miscalculated a bit, I guess.

Bumblebee pollination in greenhouses is increasing in popularity, and scope, and Larry Bulling goes into some depth on the how's and why's. There's a wall though, that the commercial operations won't let anyone pass. There are some secrets we haven't figured out, and weren't able to ferret out – but what we have is enlightening. Bumble bees may be in our future – and this is a very good start.

Kiwi pollination, as practiced in New Zealand anyway, was on the agenda, too. They've come a long way with that crop, and growers in California and other places can pick up some pointers here. And, if there's a Kiwi crop in your future, as a pollinator that is, stay tuned for this excellent article!

•

Harvests, Political and Otherwise

Political problems, at least in this industry tend to be acute in nature. We rise to meet emergencies, do the best we can in a hurry and spend our money. Then we go home to celebrate, or to lick our wounds. And wait until the next time.

A few of us are better prepared, and have hired-guns lurking in D.C.'s weeds, waiting, watching and ready to warn. It helps but it's still a defensive game for us.

And, I think the people who call the shots in D.C. have every intention of keeping it that way. Or so the game has been played for the past 12 years.

Continued On Page 462

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892

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Circulation figures are reviewed by Deloitte & Touche Accounting/Auditing.
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NEXT MONTH

We're going to pickup the two stories we thought we'd have this month, next month – Bumblebee Pollination and Kiwi Pollination – but that's only a start to what's in store in September and the rest of the year.

September is National Honey Month, and no self respecting beekeeping magazine would show up without something in the marketing area – so that's what we have. We're going to look at "Added Value" when selling honey – from several points of view – major producers who sell to big packers, to 200 lb./yr. hobbyists who go out the back door or over to a local farm market. What can *you* do for *your* customer? Tune in next month and get some ideas.

The Honey Board has certainly taken center stage in promoting Honey Month, and, with luck we'll have some of their latest data on packaging – an important part of how you sell what you sell.

Only sell a couple hundred lbs./yr? Don't think you need to contribute to the Honey Board? But want to pay what you feel is your fair share anyway? Big producers, who use the government program have their assessment handled automatically, but those who sell direct avoid all that paperwork. But they can do some paperwork, and pay an assessment on it if they want. We'll talk about assessments, first handlers, and more next month – all part of your marketing program.

Next Month – National Honey Month – celebrate right here in *Bee Culture*.

MAILBOX

■ Caged Queen

Will bees draw comb if their queen is in a cage? Why would a body want to keep the queen in a cage?

I use swarms to draw comb for extracting supers and prefer this comb not have been used to raise brood. So I put the queen in a Thurber Long Cage (made from 1/8" hardware cloth 6" x 1-1/2" x 3/8") before she began laying. I was pleased to observe that the bees continued to draw new cells, collect nectar and pollen and ripen honey as diligently as before. Apparently they get enough contact with the queen through this cage to cause them to behave normally.

Dan Hendricks
Mercer Island, WA

■ Birds, and Bees

Of the 45 years that I had bees, this is a first for me. I have always heard stories of the birds and the bees, but this I have seen. As we all know the little blackbird will attack the crow while flying overhead. I have always kind of felt sorry for the crow, but turn about is fairplay. While I was working near my beehives, I heard a bird overhead having quite a time calling out in fright and darting this way and that. Then I noticed some bees flying right at his tail. The bird would light on a tree limb to pick at the stings, then take off again. It was like fighter planes diving at a bomber, all because a black bird thought he could get a free meal at the hive entrance.

Erwin R. Steele
Buckley, WA

■ Race, or What?

I've been keeping bees and subscribing to your magazine since 1987. During this period I've tried many races of bees. Italian, Caucasian, Carniolan, and this year three Buckfast Queens in my hives. Now the people who produce and sell these Buckfast Queens claim the Buckfast is a race and not a hybrid. We all know the Buckfast was developed by Brother Adam who collected the best of races from many regions and then crossbred them to produce the Buckfast. What constitutes this as a race and not a hybrid? Please explain.

Bob Baldwin
Staten Island, NY

Editor's Note: Generally, the term "race" refers to an identifiable and repeatable variation *within* a given species. For instance collies and labradors are 'races' of dogs (*Canis familiaris*). They can interbreed and produce viable offspring. (For a detailed explanation see Mailbox, June 1992.) The Buckfast bee has attained the status of race though not claimed so by producers.

■ Another Hive Opening Tool

I read in "Mailbox" in the May issue on "Hive Opening Tool" I like the idea of using a steel strap between the bee boxes.

I have been using a simple method for several years, and it too is cheap to make. I use a stainless wire, about 24" long, with a stainless washer fastened on each end. I use a hive tool to loosen one corner of a super and simply pull the wire through. It cuts everything inside loose and I can lift off the super with no mess.

Using stainless wire and washers, means I can leave them with my hives and they don't rust.

Charles F. Yonker
Letart,WV

■ Loves O.B.

Great magazine – keep up the good work – love O.B. Wiser.

Dave McNichol
Catlett, VA

■ Insurance

I am just getting into beekeeping and I intend to sell honey at a roadside stand in front of my home. I am interested in obtaining liability insurance before doing so. It is my understanding that I can either purchase Business Insurance which is quite expensive or add Business Pursuits to my homeowners policy which is not very expensive. The problem is I live in a mobile home and the two insurance carriers that will write homeowner policies on mobiles do not offer the Business Pursuit rider. Is there any liability insurance offered thru any of the various beekeeping organizations?

John Durkin
North Street, MI

Editor's Note: Yes, the two National organizations both work closely with insurance companies that deal specifically with beekeepers. However, there are restrictions and other considerations with both. Contact them at the addresses below:

American Beekeeping Federation
Troy Fore, Sec.-Treas.
P.O. Box 1038
Jesup, GA 31545

American Honey Producers Assoc.
Richard Adee
P.O. Box 368
Bruce, SD 57220

Continued on Next Page

MAILBOX

■ Persistent

Thank you for sending me the reprint of "Wooden World" taken from the Feb. '91 issue of *Bee Culture*.

This reference material will certainly come in handy when replacements are needed. Most of my equipment is made by Root so I have no problem in the past.

A number of us on Cape Cod lost our hives in the last year due primarily to diseases. Last fall, although there was plenty of honey in the hive, I lost the last one of my hives – apparently from tracheal mites and/or nosema. A neighbor sent bees down to Maryland for examination and they found both tracheal mites and nosema in the same sample bees. The combination of these two diseases at the same time apparently is deadly as the bees just die off very rapidly. I used menthol crystals and Fumidil-B. I don't have the answer.

So this spring I started all over again installing new packages of bees and also renewed my subscription to *Bee Culture*.

My thanks once again for your thoughtfulness in sending me the reprint.

Joseph W. Homan
South Dennis, MA

NEW PRODUCTS

Free Enterprise Systems announces the introduction of their heavy duty barrel harness. Capable of lifting drums up to 85 gallons, the narrow profile brackets permit easy barrel stacking. It lifts steel, plastic, fiber, open top and most damaged drums.

The self adjusting harness weighs less than three pounds, can be operated by one man and slips on in less than 10 seconds. The all steel construction works well with fork lifts, cranes and hoists. It holds up to 1100 pounds.

For more information, contact:

Free Enterprise Systems, Inc.
P.O. Box 2374-NT
Rapid City, SD 57709
(605) 348-5040

BEAR FENCE VIDEO

If bears are a problem in your area, you might want to take a look at this new video released by Draper's Super Bee, in Millerton, PA.

Detailing the materials needed, construction techniques and maintenance requirements, Royal Draper, the spokesperson on screen, goes through each step carefully and in detail. The finished product is a well done, professional product.

The purchase price is a bit steep, but the 15 min. video is readily available for rental for a very modest price, plus tax and shipping – all less than $10.00.

For information contact
Draper's Super Bee Apiaries
RD 1, Box 97
Millerton, PA 16936
1-800-233-4273.

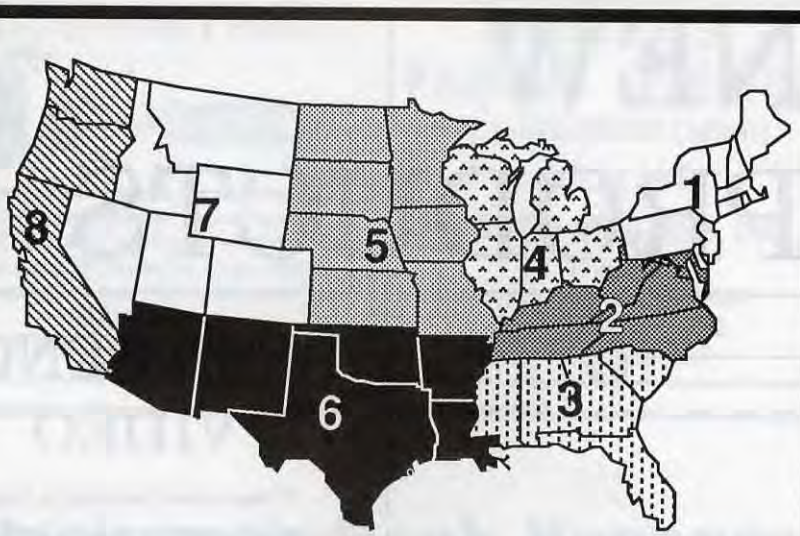
This label is the largest selling commercially available honey label we sell. Some beekeepers have been using it on their Family's Honey for over 100 years. Betty is a *very* popular lady.

But we have all sorts of honey labels you can use. We have them in easy-to-use packs of 100 you can stamp your Business' name and address on, or any other message – like "Merry Christmas" or "Thanks For Being A Good Neighbor"

Or, we can print them for you, with all the information you want, already cut and ready to apply (they come pregummed, so all you have to do is moisten and apply).

The label you put *on* your jar is almost as important as the honey you put *in* your jar. Be professional, and be proud of your work. Use Root Honey Labels on your honey jars this year. For more information check your Root Supply Catalog, or call and we'll send you one ASAP

AUGUST
Honey Report
August 1, 1992



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 #Wh.	47.80	46.50	47.65	36.00	46.50	40.49	47.50	41.13	32.40-56.40	45.40	42.37	44.39
60 # Am.	42.57	39.40	41.00	37.68	41.33	39.95	40.75	39.33	30.00-52.00	40.55	39.89	41.46
55 gal. Wh.	.673	.695	.640	.530	.571	.520	.570	.613	.52-.79	.610	.614	.56
55 gal. Am.	.610	.615	.580	.505	.555	.500	.531	.537	.50-.68	.559	.549	.51
Wholesale – Case Lots												
1/2 # 24's	21.33	24.30	26.83	21.38	29.91	28.77	23.03	21.50	19.00-31.00	23.56	21.26	18.66
1 # 24's	30.00	29.11	27.39	32.25	26.47	28.50	31.68	27.50	23.50-33.60	29.42	30.31	28.77
2 # 12's	28.36	28.25	26.72	29.02	25.12	26.50	28.40	29.00	22.20-36.00	28.04	27.42	27.40
12 oz. Bears 24's	28.22	27.15	28.25	26.75	28.18	26.13	29.35	26.55	22.80-34.20	27.60	27.92	26.29
5 # 6's	31.61	28.81	29.13	32.33	31.13	30.00	28.83	27.55	25.00-38.50	29.90	31.10	28.45
Retail Honey Prices												
1/2 #	1.15	1.17	1.20	1.12	.83	1.00	1.12	1.32	.82-1.69	1.15	1.18	1.16
12 oz. Plas.	1.54	1.60	1.64	1.58	1.19	1.33	1.59	1.43	1.13-1.75	1.53	1.55	1.47
1 #	1.70	1.76	1.88	1.96	1.34	1.60	2.05	1.76	1.40-2.25	1.77	1.77	1.70
2 #	3.17	2.77	3.00	3.83	2.39	2.65	2.95	2.73	1.72-4.00	2.96	3.11	2.95
3 #	4.33	4.22	4.50	4.04	3.82	3.75	4.23	3.70	3.05-4.95	4.11	4.35	4.05
4 #	5.50	5.20	5.33	5.02	4.85	4.95	5.07	5.00	4.25-6.49	5.15	4.74	5.08
5 #	7.37	6.13	6.55	7.15	6.67	6.63	6.18	5.81	5.25-8.75	6.60	6.75	6.50
1 # Cream	2.55	2.08	2.54	2.13	2.37	2.00	2.17	2.66	1.00-3.50	2.28	2.11	1.97
1 # Comb	3.22	2.63	2.93	2.50	3.05	2.55	3.43	3.60	2.25-4.50	3.11	2.77	2.66
Round Plas.	2.42	2.68	3.00	2.82	2.69	2.60	3.50	2.50	1.99-4.25	2.75	2.52	2.19
Wax (Light)	2.50	1.19	1.51	1.43	1.22	1.21	1.15	1.22	1.05-3.50	1.52	1.53	1.20
Wax (Dark)	1.50	1.11	1.26	1.07	1.11	1.09	1.05	1.05	.95-1.75	1.16	1.19	1.04
Poll./Col.	33.90	25.83	31.75	37.50	35.15	30.00	20.15	31.00	17.50-40.00	31.70	28.73	27.97

MARKET SHARE

Desperately seeking reporters in Regions 5 & 6. If you sell honey, and would like a free subscription, contact the Editor. You're not as well covered as we would like.

Prices generally static. In spite of the political noise this month from one (National political) party, there's still a lot of 'recession-type' thinking going on out there.

Region 1

Prices steady to slightly lower, with sales only fair. Not much hope of improvement, apparently. Bees in pretty good shape, production average. Mites still causing problems.

Region 2

Sales off, demand for old crop almost gone but new crop requests increasing. But, not very much new crop out there - rain, rain, and don't forget the rain.

Region 3

Sales steady to strong and prices doing the same. Erratic weather has caused spotty production. Rain should help fall flows in drier areas, but it needs to stop - soon. Colonies in pretty good shape, but varroa expanding rapidly - treat, or die.

Region 4

Prices and sales steady to slowing a bit. Dry areas in the south will reduce crop, maybe stop it completely. Northern half of region moist - maybe wet is better, but good early crop off early. Late crop will be good if it's warm.

Region 5

Prices and sales steady, even improving a bit due to cool weather. Early rains have set the stage for a great crop but warm weather is the key.

Region 6

Prices steady, sales declining a bit in the heat. Crop doing well, and should be above average due to good soil moisture. Sales of bees strong through summer, but concern about AHB quarantines increasing.

Region 7

Prices and sales steady to strong, as usual. Crop looks good due to adequate moisture and lots of sun. However, pesticides rearing their ugly results due to parathion cancellation, and lots and lots of bees paying *THAT* price.

Region 8

Everything absolutely everything needs moisture. Sales and prices doing best where wet, but most places aren't. Northern areas particularly short, and big fires a real possibility. Southern areas had some good early crops, but need moisture. Of course the "shakes" may change all of this.

RESEARCH REVIEW

DR. ROGER A. MORSE

Cornell University • Ithaca, NY 14853

"Bees resistant to Varroa *mite do exist."*

In Austria, a beekeeper found that 12 of his approximately 700 colonies showed some degree of resistance to varroa mites. These 12 colonies survived the winter without chemical treatment. Varroa mites were present in all colonies, but 30 - 50% of the mites found dead on the bottom board had legs that were removed or partially removed by worker bees.

It should be explained that cutting or removing a leg of an insect is almost always fatal. Insects, including honey bees, do not have a clotting factor in their blood. When an insect loses a leg the whole insect usually dries and dies. This is probably more important than the fact that a mite without a leg(s) cannot walk normally.

To find the colonies showing some degree of resistance, the beekeeper examined drone brood in the spring and early summer. Colonies with only a few mites in the drone brood were selected for further observations.

While checking the drone brood in colonies for resistance is time-consuming it is obviously effective. All of the queens in these 12 colonies were open mated and at this time it is not known if they are related or not.

It was next necessary to demonstrate that the mutilation of the mite legs was due to action by honey bees and not ants, old age or some other factor. This was done by collecting a number of live but damaged mites and examining them first under a standard microscope and then with a scanning electron microscope that allows one to see minute details on an object as small as a mite. The results came as a surprise to the researchers. They did not find signs that the legs were gnawed, chewed or torn. Rather, what was seen was a clear cut, "as if severed by a sharp knife or a pair of scissors." The next step was to introduce normal mites into a colony. When this was done mutilated mites were found. However, it should be emphasized that no bee has been seen cutting a mite leg.

The way in which the mites were mutilated varied greatly. Some lost whole legs while in others only a portion of the leg was removed. Most frequently the damage was to the two front legs. However, in some cases all of the legs were removed.

Discussion

The paper in which the above observations are reported contains several curiosities and important pieces of information. The standard textbooks on honey bees state that honey bees do not have strong mandibles. We have always thought that the chief function of a worker mandible was to manipulate wax and make comb. So far as I am aware no one has suggested that worker mandibles may act as shears though, of course, bees do chew their way through cocoons and out of their cells. This paper will prompt a reexamination of that question.

The method the beekeeper used to find the colonies that have survived mite attack, that is the examination of drone brood for mites, is remarkably simple. The examination of worker brood to determine the degree of mite infestation has been done before but I am not aware that anyone has relied on checking the drone brood infestation. There are several fast and simple methods of examining drone brood. One of these is to use a cappings scratcher. The scratcher is pushed horizontally into a mass of capped drone brood so that its prongs literally grasp each drone pupae in the patch by the neck. The pupae are then easily lifted from their cells where the number of mites on them may be counted. Many mites remain in the cells when this technique is used but the relative number present is easily assessed and is a good indication of the degree of the infestation.

How is this resistance different?

The mutilation of varroa mites by its native Asian host, *Apis cerana*, was reported in what is now a classical and frequently cited paper by Christine Peng of the University of California at Davis in 1987. However, in addition to showing that worker bees had the ability of remove legs from mites, Peng also found bite marks on the top surface of the mites. This has been reported by others but is not mentioned in the paper cited below. The action reported here pertains to only one race of honey bee, that found in Austria. However, varroa mite leg removal has been reported in other races and is widespread in African honey bees. What is important is that this confirms that resistance to varroa mites in honey bees exists and that developing resistant bees can be done by anyone. It will obviously involve some hard work. Q

Ruttner, F. and H. Hanel *Active defense against varroa mites in a Carniolan strain of honeybee.* Apidologie 23: 173-187. 1992.

? DO YOU KNOW ?

Beekeeping Potpourri

CLARENCE H. COLLISON

Inexperienced beekeepers as well as the general public often look to experienced beekeepers as experts in all aspects of the industry. Being able to handle all of these inquiries requires an individual to have a broad working knowledge in many different areas of apiculture, entomology and botany. Beekeepers need to be keen observers and good naturalists or be in tune with nature. A large part of this knowledge base is derived from personal experiences (learning from your own mistakes). In addition, beekeepers learn from reading a vast assortment of literature, by attending meetings and short courses as well as sharing experiences and ideas with others. One quickly learns that there are many different ways of keeping honey bees.

Following are several questions dealing with different aspects of beekeeping to challenge and increase your beekeeping knowledge. The first five 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. ____ Honey has been proven to cause infant botulism.

2. ____ *Clostridium botulinum* is the causative agent for infant botulism.

3. ____ Drone honey bees develop parthenogenetically.

4. ____ The veins in honey bee wings are blood vessels.

5. ____ Drones are more prone to drifting between colonies than workers.

6. ____ The Honey Bee Act of 1922, passed by the United States Congress, was to prevent the importation of _____ into the United States:
   A) Varroa mites
   B) Chalkbrood
   C) European Foulbrood
   D) Tracheal mites
   E) Melanosis

7. Bald-brood is a brood disease caused by a:
   A) Fungus
   B) Mite
   C) Wax moth larva
   D) Bacterium
   E) Protozoan

8. The first race of honey bees imported to North America was:
   A) Apis mellifera scutellata
   B) Apis mellifera mellifera
   C) Apis mellifera ligustica
   D) Apis mellifera carnica
   E) Apis mellifera caucasica

9. Development of the first instrumental insemination technique for queen honey bees was accomplished by:
   A) Harry Laidlaw
   B) W. J. Nolan
   C) W. C. Roberts
   D) Lloyd R. Watson
   E) O. W. Mackenson

10. U. S. crop that rents the largest number of honey bee colonies for pollination each year is:
    A) Apples
    B) Cucumbers
    C) Cotton
    D) Almonds
    E) Alfalfa

11. Currently there are _____ different species of honey bees found in the world.
    A) Seven
    B) Three
    C) Five
    D) Four
    E) Six

12. Honey produced from the same floral source may vary in color from one year to another. Name two factors that will effect honey color even though the honey is predominantly from the same floral source. (2 points).

13. At times beekeepers often attempt to trap colonies out of the wall of a building or bee tree. What are two disadvantages or difficulties in trapping bees out of a structure or cavity? (2 points).

14. Name three ways to protect wooden hive parts from decay and insect attack. (3 points)

15. In many areas of North America skunks can be a serious pest of honey bee colonies. Please answer the following questions in regards to skunks.
    A. Describe the damage to the colony. (1 point).
    B. When does the damage occur ? (1 point)
    C. What characteristics would you look for in determining if skunks are a problem in your apiary? (2 points)

16. Describe three approaches that are often used to protect colonies from bear damage. (3 points)

ANSWERS ON PAGE 463

FIRST BEES IN ARIZONA

GORDON D. WALLER

A typical feral colony in the protective shelter of a crevice.

With the expectation that the Africanized honey bee will arrive in southern Arizona by 1993 or 1994, there has been much speculation whether or not these "Africans" will displace existing European bees in Arizona (as they have done elsewhere). These discussions have increased our awareness of the feral honey bees in Arizona, many of which are located miles from either human habitations or apiaries of domestic honey bees.

Because southern Arizona provides an abundance of both bee forage and natural nesting sites and also has a mild climate, I conclude that this region must have been "paradise" for newly introduced honey bees first brought here by European settlers. The initial establishment of European honey bees in Arizona must have been as spectacular and as irreversible as the introduction of the first African honey bees brought to Brazil in the 1950's.

The increased awareness of the feral honey bee colonies in Arizona has caused speculation about their origin. It has been documented that the Spanish introduced honey bees to Mexico and South America; but one should not conclude that the Spanish also brought them to Arizona since this is not consistent with historical accounts of honey bees in Arizona.

***Arizona Citizen,** Tucson, July 27, 1872*
"The bees brought here from California by Gen. J.B. Allen are doing very well. They swarmed last week and were hived without other than ordinary labor. We may soon expect to have fresh honey added to our list of local products and bills of fare."

***Arizona Daily Star,** Tucson, January 3, 1897*
"The first bees known in Arizona were brought to Tucson from San Diego by Gen. J.B. Allen about the year 1872. He brought two hives of the Italian variety. It is said by those who ought to know that all the bees now in Arizona, both domestic and those swarming in the mountains, came from these two swarms, by which the entire territory and part of New Mexico and Sonora were seeded.

Think of the wonderful results which have come from these two hives of bees brought by wagon 500 miles through desert and over mountains. There are many thousands of stands of bees in Arizona. Honey is shipped out of the Territory by the carload. The mountains are swarming with them."

***Arizona Daily Star,** Tucson, March 8, 1906*
"The honey industry has become one of the wealth-producing resources of Arizona .

In this connection it can be related that the first honey bees known to Arizona were brought to Tucson in 1872 by J. B. Allen. He brought two stands from Yuma in a wagon, believing honey production would prove a success . . .

During the early (eighteen) eighties scores of hives were sent to Graham, Cochise, Pinal, Maricopa and throughout Pima counties. The result being an increase so marvelous that . wild bees, as they were called, swarmed the mountains hereabouts and the places tributary to those having apiaries.

Today there are tens of thousands of the bee stands in Arizona, all of these bees are the offspring of the two swarms or stands brought from San Diego by General John B. Allen.

The writer . . remembers the remarks of the old pioneer 'There is not a honey bee east of the California desert or west of the Rio Grande save these two hives. In a few years they will swarm the valleys and clefts of the rocks will be the harvest homes of the descendants of these two hives of Pioneer bees.'"

Since these newspaper accounts are consistent with one another for the 34 year time period they span, one concludes that two colonies of bees introduced to Tucson from San Diego in 1872 accomplished in 25 years what the Spanish bees failed to do in 300-400 years, if indeed there were any Spanish bees brought to Arizona.

In 1988, D.D. Brand stated in his paper: *After the occupation and settlement of Texas and California by the United States, wild bees began to cross the border southward.* This statement conflicts with those who claim "Honey bees were brought into Arizona by the early Catholic missionaries, probably in the 1500's"

Presently several scientists are using the latest technology* to examine bees collected from feral colonies in southern Arizona. They are developing new procedures for finer separation of honey bee races and strains and may eventually provide information about the ancestral home of the first honey bees introduced into Arizona. Meanwhile, historical records, such as these newspaper accounts, and the above conclusion by Brand should be included as part of the data base.

* Morphometric analysis, cuticular hydrocarbons, DNA analysis, allozyme analysis, etc.

I thank Clarence Benson for making this information available and for depositing his original letters from Senator Carl Hayden with the Hayden Bee Research Center at Tucson.

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by
Lynn Royce
and
B.A. Stringer

Up Close And (very) Personal

Perhaps one of the most memorable aspects of your association with bees so far this summer has been the sting. It has been suggested that the sting is only 4 mm long, and the other four inches is in your imagination! Let's look at how this very effective defence mechanism works.

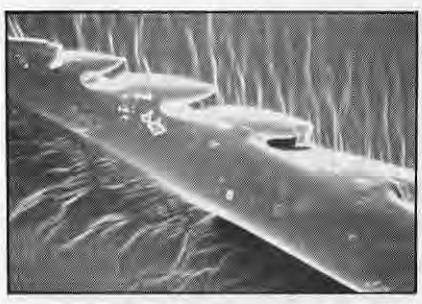
The honey bee sting is a modified ovipositor, or egg-laying apparatus. This is why drones do not have a sting. The sting is contained in the sting chamber, which is enclosed between the last few moveable parts of the abdominal tergites (top plates) and sternites (lower plates).

The sting itself is connected to complex musculature by which it can be extruded from, or withdrawn into, the sting chamber. These muscles are anchored to internal plates.

The external part of the sting is made up of a stylet and paired lancets, enclosed in a protective two-part sheath. The bulbous-ended stylet tapers to act as a guide rail for the two sliding lancets. Between the lancets is the poison canal through which venom is directed from the large internal poison sac. A second gland associated with the sting, the alkaline or Dufour's gland, opens underneath the base of the sting. Its precise function is not clear.

When a bee stings, the entire stinging apparatus is swung downwards, the shaft protrudes from the sheath, and the lancets begin a rapid sliding motion back and forth along the stylet. The effect is similar to that of a double-bladed electric carving knife as the serrated edges of the lancets penetrate into the victim. After each thrust, each lancet retains its position by means of its recurved barbs. The stylet follows the lancets into the wound, and venom continues to be released from the tip of the sting.

When the bee leaves, the entire sting apparatus tears away and is left in the wound, still probing deeper and pumping poison, thus delivering an extended dose of venom. It is interesting to note that bees are able to sting each other and retract their stings again, but when humans or other thick-skinned animals are stung, the sting remains in the flesh.



SEM Honey bee sting. Barbs on lancet anchor sting apparatus in flesh. (Royce / Stringer photo.)

The very business-like end of a honey bee sting. (Kodak photo)

SEM Wasp sting apparatus. The arrangement is similar to that of a honey bee. In the wasp, the paired lancets lie enclosed by the stylet within the hairy sheath of the sting. The honey bee stylet, on which the lancets slide, is narrower than in that of the wasp. (Royce / Stringer photo.)

MEAD

PAMELA SPENCE-ALLEN

The LEGEND CONTINUES. . . .

When a friend learned I was starting the American Mead Association and intended to publish a periodical about mead, she looked at me in disbelief. "After you put out one newsletter, what else will there be to write about?" she asked. "After all, how much is there to say about making mead?"

That was over six years and many publications ago. As it turned out there was – continues to be – a great deal to say. Mead has great historical significance, made since the dawn of time by every culture that has had any interchange with bees. Mayan Indians, for instance, fermented honey water, vanilla beans and hot peppers in jaguar hides; women in Ethiopia made T'ej, a honey beer, from honey, coffee beans and hops. Ancient Welsh meadmakers mixed the "milk" from hazelnuts with honey to make a legendary brew.

The history of mead is embroidered with legends, beliefs, traditions and baldfaced lies. It was believed to give life, health, sexual prowess, the gifts of poetry and prophecy among other things. Anthropologist Jarich Oosten maintains that the story of mead and the magic cauldron is the central cultural myth of the Indo-European peoples (*The War of the Gods; The Social Code in Indo-European Mythology*). It was the drink of King Arthur and his knights, Wise Solomon and dark-eyed Sheba, and Irish warrior-woman, Queen Medb.

Mead, however, is much more than a historical oddity. Knowledge and dedication to the ancient art have never completely died out. The published works of Brother Adam and, more recently, of Roger Morse and Dewey Caron have added valuable information and inspiration to a new generation of meadmakers. Over these past six years we have seen a real surge of interest in mead. Part of this phenomenon may be that through the Mead Association, we have brought together diverse pockets of meadmakers who were brewing without knowledge of each other.

When we began, there were meadmakers in the beekeeping community with varying winemaking skills. There were also many amateur winemakers making mead who knew little about honey. Additionally, there were people making mead from a historical perspective, using recipes and methods unearthed from esoteric manuscripts – obscure cookbooks or epic poems and songs.

Each group had a particular strength and perspective and as they discovered each other through the pages of the Mead Association publications, they created quite a stir. Serious, non-beekeeping meadmakers rarely had an appreciation of the differences in honey according to the nectar source, for instance. Honey was honey – domestic or imported, unfiltered or blended. Since one of the primary goals of the Mead Association is to create a market for domestic honey, we have run numerous articles by well-known beekeeping people about honey – where it comes from, differences in taste, performance in fermentation, and, of course, the importance of the gatherer herself, the honey bee.

Many beekeepers, on the other hand, belonged to the school of casual winemaking. They rarely kept records and were inconsistent in their methods. Yeast was yeast – brewer's, baker's, wine or champagne. They had no idea why one batch turned out well while another was undrinkable.

In the interest of teaching our members good winemaking practices we have run articles by respected oenologists and brewers. When someone experiences problems with a recipe or method, we track down a solution and share the knowledge. The best way to promote mead is to make sure that everyone who makes mead makes good mead.

The effects of this meadmaking surge is being felt in the marketplace. Byron Burch, owner of the successful home wine and beer making supply store, Great Fermentations of Santa Rosa (CA) finds that interest in mead is on the upswing. "Used to be, we'd get a question about mead on our advice line about once every six weeks. Now we are getting at least a call a day," he told me recently. Capitalizing on this interest, Burch now offers meadmaking supplies, books and honey. After getting numerous questions about the problem of sluggish fermentation, he developed a yeast nutrient blended specifically for mead.

Mead was believed to be a life-giver. It dripped down from the heavens, this food of the gods, and was collected by bees.

His most recent issue of "The Beverage People News", an informative customer newsletter, includes a recipe for "Ellipse of the Half Moon" Lime Mead and 'To Bee or Not To Bee' Honey Lager.

IMO (In Moderation Only) Homebrew and Meadery Supply is another mail order company that has responded to meadmaking interest. In his latest catalog, owner Roy Rudebusch offers "Bee pollen – a natural nutrient for mead" as well as mead adjuncts such as herbs, spices, flowers and mint. He includes a recipe for "Passion Mead" using bee pollen as the yeast nutrient.

The American Homebrewers Association has likewise observed an increase in meadmaking at their annual convention and homebrew competition. AHA president Charlie Papazian, a self-confessed mead fanatic, reports that entries in the mead categories jumped from a dozen or less to over a hundred in the space of a year. Papazian was responsible for republication of the classic history, *Wassail! In Mazers of Mead*, by Lt. Col. Robert Gayre, now available under the title, *Brewing Mead / Wassail! In Mazers of Mead*. Papazian added

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Mead – From the heavens (Fort Hayes photo)

MEAD ... Cont. From Page 439

the "Brewing Mead" section with recipes and instructions.

Interest in meadmaking has not been confined to amateurs, however. In recent years, we have seen the advent of the commercial meadery, a winery established specifically for the production of mead. Bob Stevens and Wayne Thygesen were awarded a $20,000 grant from the New York State Department of Agriculture and Markets to start the Meadery at Greenwich by demonstrating that they could provide a market for New York State honey.

Bob Lassiter has Black Fox Meadery underway in Auburntown, Tennessee. His St. Bartholomew's Mead is named for the patron saint of the honey crop. He is offering meadmaking kits by mail that include honey and a self-published instructional booklet. Lassiter hopes to establish a mead museum and sponsor a mead festival at his meadery.

These are but two examples of commercial interest in mead. We have received correspondence from many others as well: Mead Masters in New Mexico, Life Force Honey and Winery in Idaho, Little Hungary Farm Winery (producing Melomel, a honey-fruit wine, exclusively) and Havill's Mazer Mead Company in New Zealand. In addition, we have recently become aware of interest from microbreweries who produce mead-ales. Wynkoop Brewery in Denver, for instance, reports success with their Wassail Ale.

The benefits of commercial mead production are many. Mead is made from honey, a peripheral crop. No acreage is tied up in producing a crop purely for the production of wine (a luxury item after all, not a necessary food). Bees forage on a variety of plant sources and a honey harvest contains nectar from many plants. Honey, therefore, is not as susceptible to outright crop failure as grapes.

Cultivation of wine grapes often requires intensive irrigation, and extensive use of pesticides and herbicides. The California wine industry is currently under attack for the stress their cultivation practices produce in the environment. A meadmaking industry, presumably, would not cause these problems.

Because honey is produced in every state of the union, geographical areas that could not support a grape wine industry could support a mead industry – without having to put land under the plow. In short, commercial meadmaking is "environmentally friendly". It encourages good land usage, is not dependent on a single crop and fosters an industry – beekeeping – that has the even greater economic benefit of pollination.

Historically, mead was believed to be the "life-giver". It dripped down from the heavens, this food of the gods, and was collected by bees. The golden honey, when made into mead was given to the medieval bride and groom that they might be fruitful and multiply (produce life). Mead was given to slain Viking warriors by the mythical Valkyries, restoring the men to eternal life in Valhalla. Mead might indeed be a life-giver to the beekeeping industry, rekindling interest, respect and demand for domestic honey. This ancient wine might also bring new life to the domestic winemaking industry. The production of mead is consistent with a new agenda of respect and care of the Earth's resources.

Pamela Spence-Allen is director of the American Mead Association and editor of the Meadmakers Journal and the Mead Letters. To obtain information on any of the businesses mentioned herein or on the Meadmaking Journal, contact AMA, P.O. Box 206, Ostrander, OH 43061.

BRUSHY MOUNTAIN

THIS BEE SUPPLY OUTFIT HAS MADE A MARK IN NORTH CAROLINA

Rt. 1, Box 135 Moravian Falls, NC 28654

In 1977 Steve and Sandy Forrest were still in school – Steve teaching Business Administration in high school, Sandy teaching kindergarten – and they both wanted something else. Something of their own. Something at home. But what?

Steve had dabbled with bees before. Had helped a friend do all the things he thought needed doing. And making equipment seemed second nature to him since he'd been working wood forever it seemed. Maybe beekeeping. Or better, a beekeeping business?

There was a couple of years' learning curve – learning about bees, and beekeeping, learning about bee supplies, and learning about beekeepers.

They started slow, selling supplies. They contacted both the Root Company and Dadant's and became dealers. And Steve started making tops and bottoms in the basement. There were a few posters put up – "BEE SUPPLIES FOR SALE", but only by appointment and on weekends. They didn't quit their day jobs.

For the next three years they advertised with handout flyers, worked with local associations, did shows, and attended lots of meeting. They gave talks (all those years in front of a classroom started to pay off), and put up displays. They advertised in lots and lots of newspapers (classified department), and had to make more time for appointments and be open longer hours on weekends. The work started to pay off.

In 1981 it was time for a move. They quit their day jobs and went full time. At first they ran their business out of their home. They kept the office there, had two rooms for storage and supplies and a small, two room store. And Steve kept making equipment in the basement.

During this time they became involved in the Southern

Brushy Mountain's newly renovated warehouse includes shelving and palletized supplies.

State Beekeeper's Association. And, when the group needed a president, (and Steve wasn't in the room), he started a seven year reign that included lobbying in Washington organizing an Industry Leader Conference, extensive fund raising and the highlight, the joint meeting with the British Beekeepers Association in England.

In 1984 they built a separate manufacturing/wood working shop, which meant they could make more of the equipment they sold, and start making some they couldn't buy from their regular suppliers.

At the same time they renovated another building they owned near their home, turning it into a store and warehouse on the first floor and the office on the second.

The business is located in the heart of furniture making

Part of the woodworking shop, where tops, bottoms, supers and more are made. Shown are Eric and Del.

Cathy is one of the Order Entry people, but she does so much more around the outfit, too.

country in North Carolina. Cypress and native white pine are abundant, as are the skilled craftspeople needed to run equipment and turn out quality beekeeping supplies.

In 1985 they added a 6,000 square foot warehouse and shipping facility, moving their storage out of the store. This extra room gave some immediate advantages. They could purchase or produce their supplies in greater quantities, reducing their unit costs and increasing the scope of the products they could carry.

However, before the new warehouse was finished there was a near disaster. The construction company that put up the frame cut a couple of corners and, during a severe windstorm, the entire frame 'leaned' over. But good fortune, and great neighbors saved the day. For two days friends and neighbors came and helped put it back together. Some came and fixed food, others brought tools and supplies – and nobody asked for payment.

This past summer the warehouse was further renovated with shelving and other improvements put in. These additions, coupled with a thriving mail order business and walk-in trade have put this out-of-the-way bee supply business on the North Carolina map. ○

Sandy also takes orders, helps with the bookkeeping and keeps Brushy Mountain on the up and up.

Sandy and Steve Forrest, with pooches Claire and Russ.

"SO, YOU'RE A KILLER BEE..."

MAKE A HOMEMADE CAPPINGS TANK

KENDAL SMUCKER

A few summers ago I got swamped with cappings and realized I needed a better drainage system. Although the bee supply catalog I consulted showed a good-looking uncapping tub, I wasn't ready to sink $65.00 into what looked like a couple of stackable plastic tubs. Besides, I figured I'd need several to hold and drain all my cappings.

But the "stackable" concept gave me an idea. I bought six 5-gallon plastic pails from a local candymaker, and from a hardware store I bought four feet of quarter inch hardware mesh and 12 feet of stiff but workable wire.

I cut the bottoms from three of the pails with a sabre saw and set the pails aside. Then I cut the mesh into three 16" circles (four inches greater than the top diameter of the pails) with tin snips, and I cut the wire into 16" lengths.

The photos illustrate how I bent the wire into supports for the mesh, and how the mesh is formed into a "hat" with a two inch deep well and a two inch overhang. (Cutting partial spokes around the circumference of the mesh helps.)

I crisscrossed three wire supports on the rim of a good bucket, placed a mesh "hat" on top, and stacked a bottomless bucket on the mesh.

My three complete uncapping set-ups cost less than $10.00 and about an hour's labor. When I fill one set-up with cappings I simply set it aside to drain while I continue uncapping over a fresh set-up.

However, when removing the top bucket be sure to pick up the screen, too. Then simply place the cappings in a melter, or other holder. ○

The bottom unit.

The complete unit.

One pail with gate attached (L), one with bottom removed (R), a mesh 'hat' and three wire supports.

TAKE PRIDE IN YOUR WORK

The National Honey Board will launch its new educational program for beekeepers this summer. The title of the program is PRIDE to underscore beekeepers' pride in the miraculous production of honey.

PRIDE will reinforce proper honey handling procedures by introducing beekeepers to HACCP (Hazards Analysis of Critical Control Points – pronounced Hasip). The principles of HACCP promote sanitation, proper application of bee medications and documentation

The PRIDE program is designed to maintain the honey industry's image with consumers. The educational program will discuss consumers' concerns about food safety, and includes background information, tips for record keeping and a list of resources. In addition, a videotape is available. Hobbyist Jerry Webb cooperated on the videotape, and was interviewed to learn more about his hobby which he discusses with great PRIDE!

Jerry Webb and his wife Betty are semi-retired, but they run a small beekeeper and candle-making supply business in Littleton, CO. "We're not interested in promoting or developing this business," said Jerry. "We're just in it for the smiles." In addition, Jerry teaches beekeeping classes for the local college, collects swarms in the spring and maintains observation hives for the city of Denver.

Jerry gets a lot of smiles from his friends and neighbors when he presents them

Jerry Webb & Sherry Jennings

with the clover and knapweed honey he produces. He takes considerable pride in the standards he applies to producing, extracting and packing his honey.

"It's important to me that the honey I pack is pure – exactly as nature intended," said Jerry.

Jerry's honey has a golden reputation in Littleton. "The best advertising for my honey is 'word of mouth'," said Jerry. Honey purity at the Webb's is maintained through conscientious methods for sanitizing honey extracting and packing equipment. Jerry has a stainless steel sink in the honey house with a hot water tap, and he keeps his equipment clean with thorough wash-downs using a hot-water high-pressure washer.

Jerry has other tips for the hobbyist beekeeper for honey production. According to Jerry, a queen excluder should always be used. If brood is laid in honey supers the comb turns dark, and the cocoon leaves residue which will be in the extracted honey. "Always start with a nice, white comb," said Jerry.

He also believes that filtering honey produces a better looking product. "It's still raw honey, even if it's filtered or strained," he said. "Unfiltered honey may contain wood from the frames or bee parts," he added.

Many hobbyists won't use the same type of equipment which Jerry Webb uses. But he has justified the investment in power equipment since he does some custom extracting for other beekeepers and his students. He has a power chain uncapper, stainless uncapping/capping tank, a stainless 12-frame radial extractor and stainless honey packing tanks.

"Stainless equipment is very important," said Jerry. "Honey is somewhat acidic – it will pit ordinary galvanized metal." He recommends coating galvanized equipment with an epoxy material to prevent pitting.

Jerry knows that consumers have a positive image of honey. "Some think it has a magical quality and that it can cure anything," he said. People buy honey to cure allergies, to use in cosmetics and to treat burns.

But the main reason Jerry's customers buy honey is because it is wholesome and good. Most of them prefer honey instead of granulated sugar.

"I just like it on peanut butter," said Jerry. ○

FROM WAY OUT THERE *ALL THE WAY* BACK HOME

O.B. Wiser

I have been to my beeyards to check on the honey flow and it has tapered off. Here in Utah, nectar is cured very fast and even cells not capped are ripe. Moisture content runs no more than 13-15%. I have pulled some uncapped frames in each yard and checked the shake and found very little. The main honey flow is over.

Summertime is drawing to a close here in the Rockies. The days are still mighty warm the last of August, but now is the time to pull the honey so just in case I have misjudged the supers, the bees will be able to take advantage of the small fall honey flows to pack away the edges and fill the frames.

Getting honey to the honey house, or honey hut, or garage has some real challenges. The first comes in simply getting the bees out of the boxes and keeping them out.

Using fumigants or a bee brush seem to be the most popular methods of pulling honey in the United States. Both work well, but once the honey has cracked loose from the hive and you have all that weight hanging from your shoulders, then what ?

The trip home can be fraught with danger though, to both the honey and your neighbors. When I was young I ran 90 hives using a Volkswagon bus. Got the picture? I moved 16 hives at a time inside that VW bus. Now think about that. Pulling honey was backbreaking work. I had to bend over to place boxes into the bus (after I took out the middle seat). First I stacked the back seat to the ceiling, then I filled the main compartment. (Can you imagine all the honey dripping all over inside the bus. I did not know about drip trays back then. Wonderful things, drip trays). To finish, I put eight more supers over the engine in the back compartment.

Pickups are less than ideal. Supers don't fit so must be carefully fastened down, and every box gets moved by the 'armstrong' method.

Drip Trays? These are absolutely wonderful and absolutely necessary when harvesting honey. All you do is make a pallet 16 1/4" x 20" out of wood, with 3/4" cleats on two ends. Then you go to your local print shop or newspaper and ask to buy their aluminum plates used to make copy. They are great big sheets, bigger than a two page newspaper folded out. Each one will make two drip tray covers.

Cut a piece of metal the same size as the bottom of the pallet. Then make wood rims to go around the edges. Two rim pieces should be 20" long x 3/4" high x 1" wide, and two should be 14 1/4" long, x 3/4" high, x 1" wide. Use these rims to nail down the edge of the metal. Then seal the corners and ends with clear silicone.

Drip trays are wonderful. Once when I had my Dad's VW in the shop, they asked me why the stuff that dripped out of my bus was always yellow, sweet and sticky. They once had to fix our heater and found a large comb of honey in the heater vent. The drip tray will hold all the honey five supers can drip and prevent mechanic's questions about leaking fluid.

You probably don't use a VW bus. Maybe the backseat or the trunk of your car. But no matter, know that newspaper does not soak up honey. Only a drip tray stops the mess.

If your pickup has one of those worthless boxes on the back it is better than a VW bus, but only half as good as a flatbed. Putting honey on a truck is a lot better than into a car or van. So borrow a pickup come harvest time if you can. Stack the supers length-wise across the back of the cab and put them all one layer high, and then add to them. The only disadvantage is that you cannot tie the stacks of honey down in a pickup.

While Harvesting It is a good idea to cover the honey on the truck while harvesting to keep out would-be robbers. However, never, never, never leave it in place on the way home. Pull that cover and let any remaining bees fly out

This is ideal. A flat-bed truck that supers can be tied down on with a drip board on the bottom of every stack, a mechanical lift and a 2-wheeler for moving supers. These supers are covered on top to keep dust & dirt out – not a dad idea, really, and, if you've removed all the bees, should be done.

of the supers and off the truck. During the trip it is a good idea to slow down every so often to encourage the bees to leave. You may even stop a time or two so they can fly off.

At the Honey House Now that you have your precious load to whatever you call your honey house, some other problems surface. You certainly cannot leave honey in the truck, van or car. It must be moved. If the weather is still hot the wax cappings, and even foundation honey could melt in an enclosed car. The honey, no longer held in place, will tend to fill in every nook and cranny in the bottom of your car, van or truck. The mess, if you haven't guessed, is incredible.

Loose Bees and Robbers These can be real problems for a beekeeper. I like to extract early in the season when the bees are still working the honey flow. However, it seems most beekeepers harvest their honey when the bees are done in the fields and all out snooping for a free lunch – in another colony.

Getting your honey into a safe place – where bees cannot get at it – is critical. Exposed honey will attract bees. A few to your driveway may not seem like a problem. But thousands and thousands to your yard, your neighbor's yard, the street and sidewalk out front and that's only part of the problem. Left out long enough (a half day may be enough), your honey will be gone, poof! But, once inside what do you do if you've brought a bunch of bees in with your honey?

There are several ways to take care of the loose bee problem. Pull a flap in the corner of the screen over a window just enough so a bee can escape. You will notice that bees collect in window corners. If the room is dark, set up a five gallon bucket with three or four gallons of soapy water in it and a 100 watt bulb just above the bucket. The bees fly to the light, fall and drown in the soapy water. On a small scale, or a large one for that matter, a mister or sprayer with soapy water in it is deadly.

Another technique is to use a vacuum cleaner for bees on windows or even on frames. However, if you come across a frame of brood with bees, put it in a closed box and return it to a hive, if you like. Of course the vacuum cleaner can be used the other way to blow bees out of the supers. Then you can spray them with your soapy water or vacuum them up.

Home So, now you have your honey at your honey house. Hopefully, you made sure there is a place set up to extract *before* you pulled honey.

I recall the first time I extracted honey. It was back in November, 1958. Boy, was I late. The honey was like tar, both in consistency and color. I had expected Sears and Robuck to send my extractor on time, but it came late and I had to extract 25 supers around Thanksgiving. My folks had no idea what extracting meant that first year, so they let me set-up in the basement, next to the washer and dryer. My extractor stood on a make shift stand. The vacuum was an absolute necessity and every bee was sucked up. I knew loose bees in the house would cause real problems. Basements work, but a garage is better.

From then on, I had to use our garage, complete with its breaking-up cement floor. This was my honey house for the next 18 years. The biggest problem I had was that bees could get inside over and under the garage door. Even the edges were usually covered with robber bees looking for a free lunch.

To make it work, I opened the garage door and got all the honey in that needed to be extracted. Then I closed the doors and used rags to seal up the cracks and gaps as best I could. My second line of defense was to spray the strays to keep them from going home and bringing back their friends. Most garages are not going to be BEE TIGHT, so BEEWARE.

In my case, bees flying around the garage was inevitable and I was alone — just me, the heat, the bees, and sticky honey. I was most impressed when my fiancé (and now wife of 23 years) offered to help extract while we were still dating.

The Plan Have a well thought out plan to take care of your honey once off the hive. Do not think it will take care of itself, because it won't. Swirling clouds of mad bees at home, with the neighbors out on their porch wringing their hands is *not* good PR. Taking care of bees you bring to the honey house or that come to rob the sweets is a management requirement and you better plan on a method to deal with them. **And I learned that the Hard Way!** ○

A real nasty job

Charles Simon

Ways to remove bees from structures? You can take the structure apart and physically remove the colony. Or construct a one-way bee escape and work them out into a catcher hive. But there's one observation that applies to both, though, which I can make with confidence – jobs are almost always going to be *considerably* more difficult than they appear when you initially evaluate them.

There are differences between bees in the quasi-domestic state and bees that have gone wild. Domestic bees are generally easier to deal with while feral bees have taken matters into their own hands, so to speak, and are making their own decisions. Sometimes they end up in places that are easy to deal with. I once picked up a swarm that had moved into a cardboard box on the ground in a schoolyard. I taped it shut and took it home.

Too bad it's not usually like that. Often the bees secure the most protected and inaccessible locations, as though the remover was a factor to be outsmarted when choosing a home – what other predator are they protecting themselves from? Or do they just like the view? There often seems no way to get to them – at least not within realistic budgetary considerations. A helicopter would cost too much, and sometimes even that wouldn't work – too many trees, wires, power poles.

I often receive referrals from other honey bee removers who, I suspect, are smarter and better equipped than I. One time a homeowner had to have a scaffold constructed before I came so I could get to the bees. I'm sure that cost more than the removal itself, but I didn't ask.

Why me? I suppose it's because I like it. The more impossible it is, the better. I have had to become a daredevil acrobat and a magician at times. And, let's face it, the job has to be done. We can't just leave them alone, nicely tucked in their inaccessible locations, happily generating swarms into perpetuity – can we? And, I should add, extermination is not a viable solution. I receive referrals from exterminators who are aware of the limitations of their methods. Some, to give them their due, *are* actually sympathetic to the bees. But mostly they are motivated by facts that are more hardball: Extermination is a virtual guarantee bees will return. Once the poison wears off, and it does, there is a wall full of good

stuff with a practically unlimited shelf-life to attract more bees (as well as ants, yellow jackets, wax moths, etc.). Sealing it in is ineffective, and without bees to control the temperature there could be a melt-down, and that would be disastrous. Or the bees will find ways in you did not anticipate or they will chew through the wood if they can. And besides, exterminators are not usually equipped to deal with bugs that fight back. Either they can't get close enough, can't negotiate irregular passageways with delivery equipment, or don't work at night. Sometimes they kill only superficial layers, leaving a population core which is then able to regenerate. I was recently contacted by a church that has had the exterminator visit six times in the last three years. The bees are still there, in the same exact place coming and going and living life to the fullest, as though nothing at all had ever happened to disturb their harmony.

I've got more removal stories than you could shake a smoker at, but I want to tell you about one particularly unpleasant job. It started at a lovely house, built out from a hill overlooking a canyon near Santa Cruz, California. In this part of the state there are many homes built on stilts on the sides of steep hills, with literally a single wall seating on the ground – and bees just love these accommodations.

The outer edge of the deck of this particular house is a good 45 feet above the ground. And the ground angle beneath it is around 65°. The bees were situated under the floor, at about the center, above a sheet of fiberglass insulation, 34 feet up. The deck affords a fine view, which, until I performed my service, included the glinting of bees streaking out into the canyon and back under the house. Anybody sitting on the deck during daylight hours was subject to harassment.

I don't like to admit it, but this one scared me. After talking with the homeowner and coming to an agreement, there was a four-day delay before I was able to get started, and apprehensions about the situation kept intruding. I told myself not to worry, I'd be able to handle it. Events would unfold when I got there . and on and on and on. And, of course, when I finally got there it was a lot worse than I had anticipated.

To begin with, just to get to the site I had to scale down a veritable wall of a hillside using a rope. Then I had to cross over on the side of the hill several times. The footing was poor; there was nothing to hold onto. And, on each trip I had to carry some equipment, including my 34 foot ladder. Just getting everything there was worth the price of the job.

Since there was a groundcover of luxuriously dense ivy, a space had to be cleared to dig a footing for the ladder – a footing which would be minimal and inadequate, because if I removed enough dirt to do it right it meant the ladder wasn't going to reach as far as necessary.

Being slight of build and not particularly strong, that 34 foot ladder is almost too much for me to handle even under the best of conditions, but this time it was really bad. It took over an hour from the time I arrived until I was set up, and by then I was soaked with sweat and ready to quit. It was just a fleeting thought – bee removers don't quit, but I've entertained the thought a few times.

Working *with* the bees is a wonderful pursuit, but working *against* them is never a good idea. Even though your intention is to put them somewhere else and to take good care of them they don't know that – which can be dangerous. And there is always the possibility you might lose. Bees are resourceful, well-equipped, more than ready to die in defense of their home and they've got you outnumbered. You have to respect them because if you don't, you are to be worried about.

As soon as I started poking the ladder-top around the area of the nest, trying to figure out how it was going to go, the bees started following it down to search out and attack the source of the disturbance. So I had to suit up and perform even the initial setup activities fully covered.

There wasn't much to lean the ladder against. The only possible point of purchase was a couple of inches of a cross-member directly adjacent to the colony. It was the only protrusion at all close enough to the bees. The next closest was too far away. The fiber-glass insulation between joists had come loose at this point and was hanging down, providing an opening for the bees in the first place. There was also a diagonal strut attached right there which provided an anchor to tie the top of the ladder, which by the way, was practically straight up and down, fully extended, and just barely touching the lower edge of the cross-member. All in all it was a thoroughly unsafe arrangement, inspiring the opposite of confidence. I finished by tying the base to one of the main structure stilts, ten feet up the hill.

Then came the first ascent, memorable because I had to go up *before* the top was tied up in order to tie the top in order to make it secure *to* go up. I couldn't be sure it wouldn't slip, even with the bottom tied. How had I gotten myself into this?

"There is always the possibility you might lose. They are well equiped, resourseful, ready to die and they've got you outnumbered. You have to respect them, because if you don't you are to be worried about."

It was then I realized I would be working directly beneath the colony. I thought I had thought of everything, but I hadn't thought of that. It was the worst possible place to be. Honey was going to drip on me, combs were going to fall on my head, along with bits and pieces of wax and propolis. In addition, I was going to have to work leaning out backwards. Sure I *could* tie myself to the ladder, but, since I would be going up and down repeatedly, I couldn't do that. I couldn't be untying and retying every few minutes with clumsy gloved hands that were sticky and slippery.

Ideally, you would carefully remove the combs with adhering bees then trim and tie them into empty frames with thick cotton string (another of those procedures that look clean, easy, even appealing in print that you can't wait to try yourself – but just try it with sticky gloves on). The bees chew and remove the strings once they have secured the comb.

Well, the job was not ideal. I was going to be working directly overhead, leaning backwards from near the top of a fully extended 34 foot ladder. Gravity was going to be working against me, instead of for me as it does when the ladder is leaning at a proper angle, so I would have to (access the

Continued on next page

The vacuum unit I use. It works, but is inconsistant.

simian genetic heritage and) hang on with one (slippery) hand at all times. I would have to cut combs with my free hand and let them drop to the ground, right after they bounced off some part of me.

I decided to separate the bees from the combs first, because not to do so would be to engender chaos in a situation where there were citizens and pets in too-close proximity.

I have a vacuum apparatus for just such contingencies. I don't like using it however. It's inconsistent. Sometimes the bees come through the experience in excellent condition. Often they do not. Pioneer bee-vacuumers sucked bees into cloth bags. That might be better, actually. I get them into plastic buckets drilled with holes. It's critical, when vacuuming bees, to not smoke them at all. Smoke makes them fill up with honey, which turns them into heavy little bombs that don't handle the process gracefully at all. In fact, they tend to be fatally damaged when they collide with each other, the sides of the container, or if they scrape against the inside of the hose on the curves.

It's also a good idea to not stir them up. I hear myself saying this juxtaposed onto a picture of what it is really like and I could laugh. If you're going to be a bee remover you have to be able to work unperturbed in the center of a fully enraged colony, or even several. Certainly it's not often that extreme, but it sure is sometimes, and you have to be ready.

When enough bees were in the bucket I took it down, bringing an empty back up and plugging it into the system. Then I proceeded to cut out the combs, pausing occasionally to remove more bees. The act of replacing the comb-cutting tool with the vacuum hose and turning the machine on, and then reversing with only one sticky, gloved hand, required considerable poise, both mental and physical. As could be predicted, the tool was dropped several times during the operation, requiring additional trips down and back up, each an ordeal.

My suit, hat, veil, gloves, and shoes were soaked with honey and stuck with wax, propolis, and other debris, including dirt, dust, and wads of fiberglass – which, as the job progressed, tended to become disturbed from time to time and generate an insidious dust which interfered with breathing and caused coughing. I should have stopped everything and gone for a respirator mask, but chose instead to reduce my breathing to a minimum, sometimes stopping entirely, judging there would be no damage if I adjusted in this manner. I was soaked to the skin with honey and sweat. It was in my shoes, in my ears, in my eyes. The vacuum was covered completely, the ladder also, from top to bottom. There is something embarrassing about being a part of a mess like that. Even though you are an adult, doing what you have to do, gainfully and rightfully employed, it reverts you to childhood and the injunctions against all messes; but, fortunately, nobody was watching.

Then all of a sudden there was relief, the relief that comes from the realization that it isn't going to get any worse – the turning point. The rest was going to be the cleaning up.

Fortunately, there was a garden hose nearby, with plenty of pressure. I peeled everything off, hosed it all down, along with all the equipment and myself as well. I put my wrung-out wet clothes back on and rounded up the combs, digging them out of the ivy and managing to get stung more than a few times doing it. The best ones, those containing sealed and unsealed brood, and others containing honey and pollen were trimmed and put into medium depth frames in a super with bottom and top boards.

Then I hauled everything up the hill in the several trips required, barely able to pull myself up with one hand with the rope while carrying each time whatever I could handle with the other. The entire operation had taken only four and a half hours; but it was so intense that I was completely exhausted.

Then came the 30 mile drive to the apiary, where I returned the bees to their combs. It is better to leave the hive at the site for a few days but that could not be done because the homeowners were leaving the country on vacation, and I had to be out of there. Too many of the bees were damaged. It didn't look good. I put on a second super for space, hoped for the best and headed for home – 25 miles. I had survived. It could have been worse. I could have fallen on my head on top of the family dog. I could have been killed and sued for injuring the dog. I was too tired to eat dinner. I remember taking a shower, but I don't remember going to bed.

I went back the next day to finish up.

There was a cluster of bees waiting for me. I took them to the apiary, where I found my worst expectations had come to pass. The others had given up the ghost.

I have a piece of advice for myself: CHARGE MORE.

And I have some advice for any would-be bee remover. Don't! If this sounds like a tale of woe, I suppose it is. But don't get me wrong, I'm not complaining. I wouldn't have it any other way. If it were clean, easy, fun, and lucrative as well, I wouldn't be able to stand up against all the younger, stronger, and brilliant competition there would be. Powerful young beekeepers with new trucks, assistants, cellular phones and family backing. But it's not.

Like they say, it's a rotten job, but somebody's got to do it. Q

A how-to guide for anyone considering buying used beekeeping equipment

BUYING USED HIVES

As you proceed through a successful season, watching the nectar come in, piling on the supers, anticipating the harvest, do you sometimes think more hives might be a good idea? You know, if one hive is good, two must be better, if two hives are better, then well, you get the point. Maybe more is better, maybe it isn't, but at one time or another, most of us think about it. Sometimes our better judgment takes over and all is well: other times, during one of those weak moments, someone offers a hive or two for sale and we're caught. What if that happens to you? How do you respond? Do you go to the seller, look over his wares, and come to a sane and sensible decision? Of course you do. After all, it's a beehive you're buying and you're a beekeeper. As a beekeeper, you know all about bees and bee hives. So, you should have no trouble buying a hive.

Actually, it can be a little like buying a used car. You find one that meets your specifications and seems to be in your price range, you look at it, kick a tire, drive it a little, agree to a deal, and pay more than you really wanted to. Then when you get home you think of all the questions you *should* have asked, and all of the things you *should* have looked at. It's easy to do the same thing with a beehive. Of course, with a hive you don't kick as hard.

Most of us can be excused if we are a bit uncertain about what to look for when buying a used car. Sure, we drive cars but we're not automotive engineers or mechanics, and cars get more complicated every year. As knowledgeable beekeepers though, we can do a little better buying a hive. Presumably we do understand bees so there should be no excuse for making a bad deal. A check list helps, though. As you're standing there with that hive in front of you, it's easy to forget what you're doing, especially if the seller is by your side, yammering in your ear about what a great deal it is. So let's get organized.

Watch the colony a bit. Is there lots of activity, some, none? Should there be for the time of day and year?

First, the obvious. As you approach the hive, what is your first impression? How is the setting? Is the hive sitting there proudly, proclaiming its place in the scheme of things, or is it surrounded by brush and weeds, obviously untended for a while? Aside from the setting, does the hive look right, bees coming and going, everything shipshape, or is it a bit shabby, with perhaps a few extra entrances here and there, and maybe not too much flight activity? Considering the season and the time of day, does traffic seem acceptable? What about its demeanor. Were you able to walk right up to the hive without the bees being upset? Overall, is this a hive you would be proud to have in your bee yard or will

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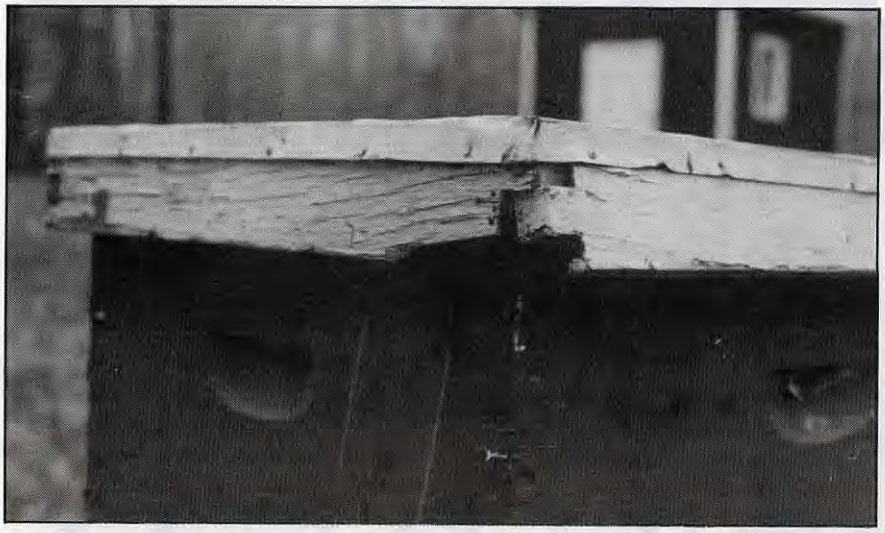


Look at the outside first. Good shape, or bad?

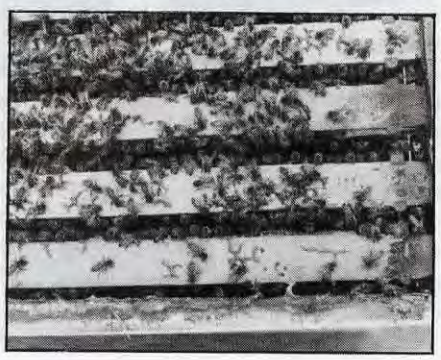
Careful, this hive obviously has problems.

you have to work on it a bit?

Now let's look a little more closely at the packaging. Is it conventional, with standard size boxes, well made, and all the parts matching reasonably well? Is the hive as advertised; is everything there? Does it have the requisite number of hive bodies, a bottom board, covers, and whatever else you were expecting? What condition is it? It is not always true but the outside appearance is often a precursor of what you will find inside. Does the hive have a decent coat of paint or other protection, or is it bare to the weather and deteriorating? Look at the joints where two hive bodies come together. Have the corners been chewed away by hive tool action, allowing moisture to attack? Check for rotten wood. With the corner of your hive tool or the tip of a jackknife blade, press gently on any suspicious surface, especially near those worn corners. Is the wood sound? Reach underneath the bottom board and lift carefully at each corner in turn. Has that bottom board been sitting too close to the damp ground for too long? Does the wood crumble as you lift a little? No? Good. Now that you have established that the outside is sound, it's time to open the hive.

First, lift off the outer cover and look it over. Was the cover painted on the inside as well as on the outside? If not, over time it may have absorbed excess moisture from inside the hive and started to deteriorate. Is the cover made partly of masonite, which tends to retain dampness and sag so that it touches the inner cover? And the inner cover itself is it made with either masonite or plastic, both which will allow it to sag and touch the top bars of the frames, maybe not when new, but

When you pop the cover do the bees fly up (remember time of day & year), or remain calm. Are there as many as there should be?



WHAT ELSE

Don't overlook the honey crop that sets on the colony. If it is to be included in the deal, you could get a good share of your purchase price back as soon as you extract. If you sell honey at even bulk prices (about 50¢/lb.), a deep super, when full is worth $40-50 – not a bad deal.

But even if it doesn't have supers of honey at purchase, a full colony of bees *in the spring* will produce *some* surplus in the fall (weather and management depending). Again, some of your purchase price will be returned, only a bit later.

However, the colony may be sold this fall *after* the crop is harvested. If this occurs you will need to move to a location that provides a fall flow (if you live in the north), or be prepared to feed sugar syrup and/or medication for winter prep.

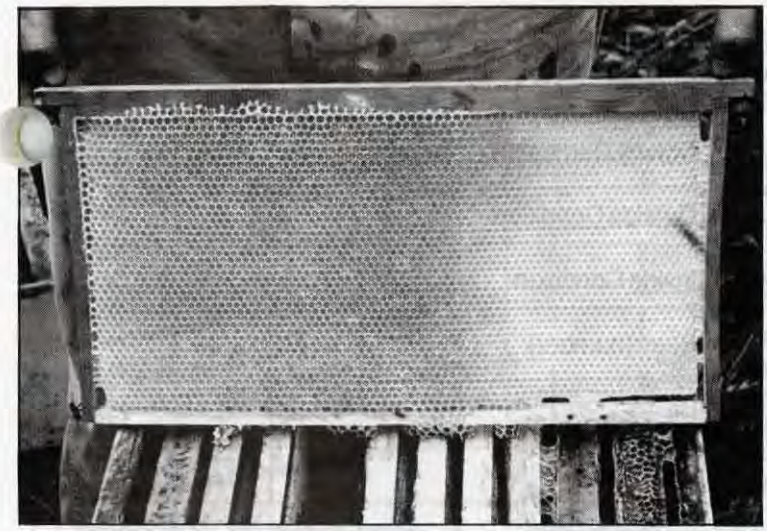
When considering price, consider what you will *receive* in both the short and long run from this colony. A strong colony that's healthy and has been well cared for, that comes in sound equipment should be a solid investment. It will produce honey, if not the remainder of this year, certainly next.

Also, consider what that colony will *cost* you in the long and short run. Moving costs? Replacement parts? Feeding costs? Medication? New queen? More bees?

If your colony is to be used to increase your production this year you will be more inclined to look at short run costs and your cash flow. Alternatively, if the colony is purchased for the enjoyment of the hobby, even long term costs may not be important.

All costs, no matter what the colony is used for, must be weighed against the purchase of new equipment, bees and a queen. And included in this cost is the time required to assemble, locate, populate and establish a new colony.

Also measure what equipment comes with the colony. Are there extra excluders, covers, frames, supers, smokers, or the like that you can put to use right away, reducing your purchase price if you had to buy new.



Are the combs in good shape? Are they light colored, or dark and old, possibly harboring disease?

ultimately. If this has happened, you will discover it when you try to remove the inner cover and find that it is firmly glued to the frame tops. Next, with the covers out of the way, look at the edges of the hive bodies adjacent to the frame ends. Are these sound? Continued or undue pressure from the hive tool while prying out the frames can break this relatively fragile part of the hive body.

Next, look closely at the rest of the hive body, especially at those edges that have been exposed by removing the covers (and look again when you get down to the bottom hive body). Moisture often collects along these edges, allowing rot to set in. Probe gently with your blade.

It's time to look at the bees themselves. What was your impression of the strength of the colony as you removed the covers? Plenty of bees on the frame tops as the inner cover came off? How about the brood nest. As you look down between the tops of the frames, is all of the available space being used, or are only a few frames occupied?

Of course, this judgment must be related to the season, and to some extent to the time of day. You would not expect booming activity throughout the hive if it is the off season or if the day is a little cool, but if a nectar flow is in progress, you would like to see them responding. A good colony will probably have some activity throughout the hive at any time, temperature permitting.

Next, pull some frames. Work your way across the brood nest, looking at several of them. Check the condition of the frames themselves, the wood, and then the apparent age and condition of the comb. Are these conventional frames, compatible with what you use? If they are different, can you live with them? How many frames are in each hive body?

How old is the comb? Is it black and well used, perhaps past its prime, or has this beekeeper renewed it periodically with new foundation? Remember, old black comb is a likely repository of disease organisms. Maybe the colony is basically strong and healthy but a little stress could allow some of those organisms to multiply and take over.

Again relating it to the season, how does the brood nest look? Is the number of frames of brood about right, and is there a good balance of the different stages of brood — eggs, larvae, and pupae? How about drone brood or cells. Are they excessive? How is the brood pattern? Perhaps now is a good time to stop and think about the queen.

Are brood frames full? Is the pattern solid, in concentric rings like this, or is it spotty and random? How old is the queen?

You may or may not see the queen as you go through the hive but by now you should be able to make a judgment about her. You have had an opportunity to observe several indicators. If you are seeing an active, productive colony with good population, acceptable disposition, and a good brood pattern, you can assume you have a decent queen. Shortcomings in any of these areas are cause to wonder. But even if you decide she is a poor queen, that is not sufficient reason to reject the colony. She can be replaced. You just have to factor that into your final deal.

Earlier, we mentioned disease organisms. If present, adult and brood diseases should be obvious to you as you proceed with your inspection, and their absence reassuring. But even if the hive appears disease free, it is important to ask if Terramycin® is used routinely. Terramycin®, of course, does not cure American foulbrood. It simply suppresses it. If this medication has been used routinely as a preventive, foulbrood spores could be present, though dormant. You must continue the treatment. Otherwise, you could find that you have an infected colony on your hands, once the effects of the last treatment wear off. If Terramycin® has not been used and the colony appears to be disease-free, then you are free to follow your own inclinations.

The same line of questioning is appropriate for Apistan® and menthol. Are mites present in your area? Most of us have encountered tracheal mites, but for some Varroa is still in the future. If you are in Varroa territory, has this hive been checked, and if so, when and by what method? If Varroa was detected, was Apistan® used?

As look and ask, an actual checklist might be handy. For one hive, perhaps it is not necessary, but at the same time, it's nice to have something to refer to when you're all done. Such a list doesn't need to be obtrusive, perhaps just a three by five

Continued On Next Page

BUYING. . .Con't from pg. 457

card that slips easily into your pocket, set up so you can make check marks or fill in numbers. For instance, you may want to set your rating card up like the one on the right.

As you proceed through the hive, check off each category, with 1 meaning excellent, 7 meaning poor. Modify this card to suit yourself. Use a larger or smaller range of numbers, or add or subtract categories to make it all more meaningful to you. When you're all done, the pattern of check marks should give you a good summary of the hive's condition. If most of the marks are in the low numbered columns, that suggests a pretty good hive, while a lot of marks in the higher numbers would mean that you might want to continue your search elsewhere. A random scattering of marks all across the card would mean some further thought about what you have just seen, and some mental weighing of the relative importance of the categories.

Don't forget to leave some space for notes or other information not covered on the score card. You may not remember all that you saw when you get home, especially if you are looking at several coolonies.

1	2	3	4	5	6	7
First Impression						
Colony Demeanor						
Outside Condition						
Inside Condition						
Bees (number)						
Brood						
•Amonnt						
• Distribution						
•Pattern						
Productivity						

Another method of rating a hive would be a check sheet similar to those used in honey judging, where each category is weighted. For instance, you might think that some categories are relatively less important while others should be emphasized.

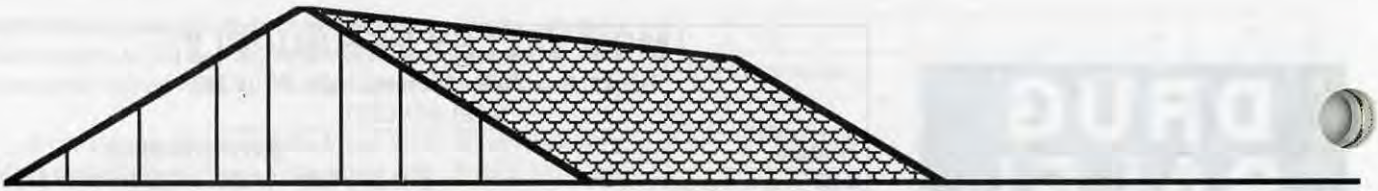
	Points Possible	Points Awarded
First Impression	5	
Demeanor	5	
Outside Condition	15	
Inside Condition	25	
Bees (population)	15	
Brood •Amount	10	
• Distribution	10	
•Pattern	10	
Productivity	20	
Disease/mites	20	
Medication	10	
TOTAL	**145**	

Again, the categories and the scoring can be changed to suit the individual. This scheme has the advantage of being weighted in advance so that a score can be read off and used directly. A hive that scored 130 of a possible 140 points, for instance, is a decent hive. One that scored much below 100 might need some careful thought and perhaps some heavy dickering before you actually buy. Something in-between also requires thought but you have the information in mind now to make the decision.

No matter what the outcome, though, you know what it is that you have just bought or rejected. If it is a good hive, you can feel comfortable, even if you spent a couple more dollars than you originally planned. If it is a less than a top quality hive, you have been able to recognize its shortcomings, presumably you have paid accordingly, and you know what to do to bring it up to your standards.

Now, how do we apply all of this to buying a used car?

Don't be afraid to bring along a friend who is more experienced than you in looking at colonies. Nor should you be intimidated by a seller who constantly chatters while you look. Dont be shy, it's your money you're spending.



HOME HARMONY

CANNING SEASON

ANN HARMAN
6511 Griffith Road • Laytonsville, MD 20882

August is the month of "too much": too much heat, too many zucchinis, too many tomatoes, too many bugs, too many _____ (you fill in the blank).

August is also the month when many beekeepers start to take off the spring and summer honey crop. This year some will find not enough honey, while others will find "too much" – if that is possible.

Can we combine the abundant harvests – certainly! And both will be the better for the combination. Bees have pollinated your crops, now their honey can enhance the fruits of that labor.

Honey can successfully be used in preserving foods, either canned or frozen. Dark honeys will, of course, darken the final product. This may not be objectionable with jams or jellies, but dark honey may give pickles a strange appearance. A strongly flavored honey may not be the best choice for a fruit preserve but may enhance a spicy chutney. A bit of experimentation is necessary when first starting to preserve with honey, but remember that the experiments are seldom failures. The results are perfectly edible and usually delicious.

One important thing to remember when choosing a honey for preserving – if the honey is not fit to eat, then it is not fit to use in canning, or in cooking either. Fermented honey will contribute a weird yeasty taste; bitter or disagreeable tasting honeys will contribute that taste and may even overwhelm the fruit or vegetable flavor you wish to have.

Several good books are available for the procedures of canning, freezing and drying your garden's bounty. Your cookbook shelf should have some of these, and they should be reasonably up-to-date so that you can take advantage of the latest information on food processing. These books contain excellent recipes also, but I have found that honey is not featured. Many of the honey cookbooks available have good recipes but unfortunately the jams and pickles chapters contain only a few recipes.

Although you may be very tired of yet another tomato or zucchini right now, on a dreary day in January you will be wishing you could have saved at least one to eat. Home preserving of fruits and vegetables is never appreciated until winter comes.

Tomato Chutney

This recipe will make use of several garden products. You might wish to make several batches – some to keep and some to give as Christmas presents (along with the recipe to encourage people to use honey).

16 large ripe tomatoes
3 large apples
3 large pears
3 large peaches
2 onions, chopped
1 cup apple cider vinegar
1-1/2 cups honey
1 Tbs salt
1/2 cup mixed pickling spices

Plunge tomatoes, apples, pears, and peaches into boiling water, then immerse in cold water. Core and peel and then chop fine. Mix all the ingredients together and boil until thick. Spoon mixture into hot sterilized pint jars to within 1/2" of the tops. Complete seals and process in boiling-water bath for 5 minutes. Makes 6 pints.

Putting It Up With Honey
Susan Geiskopf

Quick Pickled Peppers

Sweet peppers come in several colors: green, red and yellow. You can make this next recipe with just one color, or you can make a mixture. These pickled peppers are quick to make, as the recipe title states, so that you can have a little different treatment of peppers during the growing season.

4 large bell peppers
4 cups water
1 cup cider vinegar
1/2 cup honey
2 tsp pickling spice
1-1/2 Tbs salt
1 clove garlic, peeled

Cut the bell peppers into thick strips or 1" squares. Heat the water in an enameled or stainless steel pan. Add vinegar, honey, spice, salt and garlic. Mix thoroughly, then add the peppers and simmer gently for about 15 minutes or until just tender. Turn off the heat and let stand for another 15

pickles & salt

Pickles depend upon salt as part of the preservation process. Use a product called "pickling salt" Ordinary table salt has some extra ingredients in it to discourage lumping – hence the famous Morton's salt motto. These ingredients will cause cloudiness in your pickles and definitely harm their appearance. Pickling salt can be found where canning supplies are sold. Store it in a tightly sealed container because it will pick up moisture from humid air and stick together in lumps.

minutes, then transfer the peppers to a quart jar. Strain the liquid and pour in as much as is needed to cover the peppers completely. Cover the jar with waxed paper and let it stand for 24 hours. Makes 1 quart.

The Vegetarian Epicure Book 2
Anna Thomas

Hotel Copely Relish

This next recipe makes an attractive relish and uses up some of the garden surplus. Although you start the green tomatoes the night before, this relish is quick and easy.

1 quart green tomatoes, finely chopped
1/2 cup salt
1 quart ripe tomatoes, finely chopped
5 small yellow onions, chopped
3 red bell peppers, finely chopped
2 green bell peppers, finely chopped
1-3/4 cup white vinegar
1 cup honey

Cover green tomatoes with the 1/2 cup salt. Let stand 12 hours. Drain. Combine them with remaining ingredients in a large kettle. Cover and simmer 30 minutes. Pack into hot, sterilized jars. Seal. Process 5 minutes. Makes 4 to 5 pints.

All About Pickling
Ortho Book Division

Zucchini Relish

And now for the abundant zucchini. Although it is said that insects will inherit the earth, I firmly believe zucchini will be in second place. I must admit there have been times when I thought about driving into a residential area in the middle of the night and leaving a zucchini on every doorstep. However, this is such a good relish recipe that I am glad to have some zucchini to make it. The carrots add a touch of color and a nice flavor.

The vegetables should be coarsely ground or chopped.

4 cups ground zucchini
3 cups ground carrots
4-1/2 cups ground onions
1-1/2 cups ground red or green peppers
1/4 cup salt
2-1/4 cups vinegar
3/4 cup honey
1 Tbs celery seed
3/4 tsp dry mustard

In a large kettle combine all the ingredients. Cook for 20 minutes or until vegetables are crisp tender. While still hot, pack into hot sterilized jars, seal and process in a boiling water bath for 20 minutes. Makes 4 to 5 pints.

12 Months Harvest
Ortho Book Series

Chutney, pickles and relishes are not only nutritious (especially from our own gardens with our own honey) but they contribute a spicy-sweet condiment that enhances the most ordinary meal. Although you do have to prepare them during the busy months of summer, they are then ready to serve during autumn, winter and spring. Enjoy your surplus the year around.

Inner. . .Con't From Pg. 424

The thrust of agricultural policy during that time has been, at least in their words, to open America to the scrutiny and competition of the global market place. American farmers are being herded into agreements not to their liking in the name of "Free Trade", tariff agreements, most favored nation status and the like. It's not a bad theory, on paper, but not very practical from the perspective of the American beekeeping industry.

Beekeepers don't have the advantage to continue making bigger tractors, wider cultivators or more efficient harvesters. Beekeeping is a one-at-a-time activity, and, although the trucks we carry bee hives on get bigger, hives still require personal attention.

Moreover, I don't care how many corners you cut, how many loose ends you tighten up or how creative your bookkeeping becomes, the U.S. beekeeping industry cannot compete with Mexican wages, Chinese requirements for foreign cash or nearly any other country's desire to exchange an expendable commodity for American favors. American beekeepers who work nine, ten, or more hours a day, who drive big rigs for days and days, or who routinely suffer the stings and arrows of working with bees can't work for $3.00, or even $10.00/day pay. The same government that says compete with 10¢/hour wages won't let us *pay* those wages, even if there was somebody who could live in this country *on* those wages.

So. Can American beekeepers compete in a global economy on such an uneven playing field? No. It's not even close. We don't have tariffs to even the score, nor do we have a subsidy program worth the paper some economic wizard wrote it on.

> It's time for a change. The direction the USDA has taken American agriculture for the last 12 years has not been in the best interests of American beekeepers

All things considered, we don't stand the proverbial snowball's chance if things don't change.

For 12 years the people in charge have lead, pushed, pulled, bribed, cajoled, bartered, (and worse), to get us to the "Free Market" status they want. They let foreign honey into this country freely (well, almost free – a 1¢/lb. tariff *is* free compared to what *we* must pay to enter other countries), while at the same time they have reduced the subsidy, increased the cost of working with the government and continued to harass the program now in place.

They candidly state the 'most efficient' should flourish, and the 'least efficient' should fail in the name of "Free Market" They want us to believe it's the New American Way, folks.

Well, I think it is time to change that attitude. It's a load of bull, pure and simple. No one doubts American beekeepers are the most efficient and productive honey producers in the world, bar none. We must not be replaced because other countries want our dollars or for ANY reason!

In a little over three months the opportunity to change this presents itself. And a change must be made to protect the future of American agriculture.

It is time to stop farming-out American agriculture!

Kim Flottum

QUESTIONS? ANSWERS!

Richard Taylor

Uppers O.K.

Q. Is not an upper opening in a hive beneficial, allowing more direct flight to the supers and reducing travel stain? One of my colonies actually uses a hole in the top of the hive more than the regular entrance below.

Verne M. Marshall
Geneva, NY

A. Upper entrances, resulting from cracks or holes, are certainly harmless, and sometimes improve ventilation in winter. The bees do, indeed, seem to prefer them. Sometimes a hive that seems at first quite inactive will be found to have bees streaming in and out of a crack in the back. But I think there is no point in creating such upper entrances by drilling holes. The foraging bees do not deliver their nectar directly to the combs, but rather to house bees. It is then reduced and chemically altered before being stored as honey. Where the bees enter and leave the hive makes no significant difference with respect to travel stain.

Movin' On

Q. I have acquired, as a gift, an apiary located in the woods and long neglected. The hives are very heavy and in broken condition. My problem is how to get them moved, given their weight and the difficulty of screening and taping them to make them bee tight.

Richard T. Dallas
Ozone, AR

A. An apiary, even a derelict one, is very valuable and well worth salvaging. Once you get the hives, in whatever condition, to your home yard then you can go about putting them back in good condition in an orderly way, burning the equipment that is worthless and replacing it. You will be surprised to see how many of the frames and combs are in far better shape that you would have supposed. The best way to move such a mess is, first, to staple the hive parts together, using big staples made for this by the bee supply companies. Don't try to screen the hives or confine the bees to them. Instead, load them all onto a pickup truck then cover the whole works with a net, leaving room at the sides to tuck the net in all around the edges. Nets for this very purpose can be purchased. Two people can load ten hives onto a pickup and be on their way in less than an hour. Try to pick a cloudy day, when there is minimum bee flight, or do it late in the day, but well before it gets dark. Some flying bees will be left behind, but there is not much you can do about that, other than to leave a small, queenright colony there. Stray bees will find their way to this in a few days.

The Undone

Q. What can you do with partially filled circular sections?

John Iannuzzi
Ellicott City, PA

A. 1) Return them to the bees to finish, or 2) consume them at home, or 3) sell them as "seconds" if they are nearly filled, or 4) cut out the part that is capped over and pack several of these chunks of comb honey in wide mouth jars, fill with strained honey, and market as chunk honey, or 5) set the unfinished sections out near the apiary in late summer and let the bees clean them out. If you do (1), then be sure to put the sections most nearly filled to the outside of the super.

Foamy Problems

Q. We have a problem of foam on the surface of our honey after we bottle it. We strain it as it comes from the extractor and then strain it again through four layers of 68 mesh nylon as it is poured into the bottler. The honey is heated to 140° for 30 minutes or 160° for one minute or some combination between these. What happens if the honey is not heated enough or is heated too much?

William E. Vieke
Vincennes, IN

A. Surface foam results from a combination of things, including pollen and wax in the honey, the incorporation of tiny air bubbles during straining, heating and filling. It can be minimized by letting the honey stand in the bottling vessel for a couple of days, preferably in a warm room, then bottling from the bottom. With respect to heating honey, my recommendation is not to heat it at all and then put a label on the jar with directions for warming it in case it crystallizes in the jar. Alternatively, you can warm it to 130°, no more, let it stand for a few hours so any foam will rise to the top, then bottle from the bottom. I consider 130°F. the maximum to which honey should ever be subjected. Any heating of honey causes deterioration of flavor, in my opinion, and overheating seriously degrades it. Any heating, even to a low temperature, must be done in a water bath. Honey is totally ruined by any direct application of heat. Honey is a delicate substance, and the only reason for heating it at all is to retard granulation.

Second Screen

Q. What can you do when you put an escape board or screen under a super and then go back a couple days later and find the super still full of bees?

Duane Wald
Covert, NY

A. What I do is slip a second escape screen over the one already there. This never fails, unless there happens to be some brood in the super. It is quite impossible to get bees to abandon even a small patch of brood.

Questions and comments are welcomed. Enclose an addressed envelope and send to Dr. Richard Taylor, Box 352, Interlaken, NY 14847.

BEE TALK

RICHARD TAYLOR

Box 352, Interlaken, NY 14847

"I've Grown Accustomed To Her Pace"

I love old things. But I don't mean antiques, valuable because of their age. I love old worthless things that I can fix and put to use. I don't throw anything away if it has the remotest speculative future use. I like to take old frames, clean them up, add a nail or two where needed, rewire them, insert foundation, and get them back into use. That gives me a very good feeling.

I've got an ancient electric wire embedder that is one of my treasures. I paid one dollar for it, second hand, nearly 40 years ago, and it has been used for every sheet of foundation I have wired ever since. That's a lot of use.

This reluctance to discard anything creates a clutter in my honey house, basement and barn, but it also keeps overhead down. I almost never buy anything new for beekeeping. I can usually find what I need in what I've got, something that will serve the purpose at hand.

But my old bee truck, the little pick-up I've been using for over 20 years, finally went the way of all mortals. I'm going to miss her. We went through a lot together, hauling bees and honey, going off after stray swarms, rejoicing in the summer air. I always felt that we belonged together. And she was purring along beautifully right up to the end. You wouldn't have thought there was a thing wrong with her. But then one day I loaded a couple of huge chimney blocks on her, and that was mistake. I had knocked down this cement block chimney but, naturally, could not bear to discard the big chimney blocks. I finally decided maybe I could use them as hive stands. Just lay a couple of two-by-fours across a couple of these blocks, I figured, and I'd have a fine hive stand to hold two hives. The scraps of two-by-four cost me nothing. The lumber yard just throws them out. So my idea was to haul away a couple of these blocks each time I went to one of my bee yards. But when I got back from the first such trip I found that my dear old truck had gotten a rupture. The springs were coming right up through the truck bed. I got my friend Larry, an expert on this sort of thing, to have a look at her, and he just stood there shaking his head. Hopeless. The end had finally come. I will miss her.

Well, I had picked up a replacement vehicle, very cheap, some time ago, in anticipation of this, and I know I'm going to come to love her too in time. She's a fine old Subaru, four-wheel drive – that is her greatest virtue. She can go in and out of anything. And I can keep all my bee stuff – smoker, smoker fuel, spare hive parts, everything – there in the rear end and they won't get rained on. And she runs beautifully. But she has her own way of doing things, and is stubborn. She doesn't want to go more than 20 miles an hour up any hill, maybe 15 up a big one. If you press her on that her engine will speed up, but she still keeps her own slow speed. It's sort of the other way around down hill. She wants to roll right along then. If I let up too much on the gas, to slow things down a bit, there is a frightful rumbling and banging of protest underneath, for the muffler and tail pipe have long since disappeared.

She is sort of falling apart, no doubt, but she is still strong as an ox and never lets me down. I brushed up against the side mirror one day, and it dropped to the ground. When I first got her I turned the knob, just curious, to see whether the rear wiper worked. I'd never had a car with a wiper in back. Well, it rose to a vertical position, stopped, and has remained stuck there ever since. And I soon learned that unless I disconnect the battery after I turn off the engine it will be dead in a few hours. Bad connection someplace, I guess. So before I start off I push the battery cable on, and then when I get where I'm going I pull it off again. That solves the problem.

I bought this great car in the fall, left her in the yard, and by spring the hood was stuck down so I had to use a crowbar to get it open. That was fine, except the next time I drove off, going only fifteen miles an hour, the hood flew right up against the windshield with a frightful bang. So now I keep the hood tied down with a piece of rope. But I can still reach in there, to put the cable on and off the battery post, without having to untie the rope. The crowbar left plenty of space for that.

I found an old top carrier at a yard sale, for 50¢, with four sides, and fixed this up on top with four lengths of strap. That's very useful, even though it looks pretty funny. I can carry extra hive bodies, covers, all sorts of things up there. So that was money well spent.

I could hardly be more pleased with this fine old bee vehicle. She does insist I use my seat belt, though. That seems pretty unnecessary, given the way I drive, but if I don't do that I get this annoying bell dinging away until I buckle up.

There's not much overhead here – gas, oil (she doesn't burn much), maybe a new plug now and then. She's officially a farm vehicle, which means I can only drive her to my bee yards. So the registration and plates cost me just one dollar per year. And there is no inspection requirement, for the same reason. That saves some more dollars.

One of my youngsters described this fine vehicle as a piece of junk shaped like a car. That is apt, but to look at her that way is to overlook the beauty that goes with age. And she proved herself again just the other day. I loaded *three* of those big chimney blocks into her rear end. She rode pretty low, and there was some squeaking, but she did the job.

I've grown to love this fine bee wagon.And she seems willing to do just about anything I ask, within her capabilities. It's going to be a lasting relationship, no doubt. She's only got about 98,000 miles and ought to go half that again. She'll probably still be around even after I have gone to my eternal reward. Q

GHOSTS

Roger Morse

Several years ago, a scoutmaster who was a good friend came to me and asked, "Do you still own that abandoned, broken down old house on Mt. Pleasant?" When I told him I did he proceeded to tell me the following story.

First about Mt. Pleasant. It is a heavily wooded hill a few miles east of Ithaca, NY, where I live, that is only lightly settled and little farmed. It is a perfect place for a boy scout outing and so it was used by my friend and his scout troop. I had bought the old farm house and some land on the top of Mt. Pleasant and wasn't really sure if I should tear down or repair the house. It was just siting there, the windows and doors long since smashed and gone by children on a lark.

One evening, around a campfire on Mt. Pleasant, the scoutmaster and his boys were talking about good and bad, evil deeds and ghosts – especially ghosts. It occurred to the scoutmaster that one way to put the question of ghosts to rest was to visit the local "haunted house", my old house which was only a short distance away. However, to be proper, it was important to wait until midnight, which they all agreed to do.

The night was warm and the moon full – perfect ghost weather! The troop walked up to the house slowly. "They were a little unsure of what might happen", the scoutmaster said. They could have walked in through the front door but instead, two boys picked up a third and helped him in through a window. The window sill was about five feet up from the ground so the boys could not see into the house easily.

The boy in the house, now framed by the window opening, turned to the scoutmaster and reported, "I thought you said there was no furniture in this house, I'm standing on a table." And then he let out a horrible shriek and jumped out of the window and ran, as fast as he could, down the road. The scoutmaster and the rest of the troop followed with the scoutmaster shouting, "Stop. Come back. There are no ghosts. What is wrong?"

The group stopped about a thousand feet away and the young scout blurted out, "That table I was standing on was a beehive!"

And, it was. While trying to decide what to do with the old house I was aware it was visited by curious people and I was worried someone might be cut with glass or otherwise hurt. I had placed about five two-story colonies in strategic places in the house where the bees could fly in and out of the doors and the windows. In fact, had the boys decided to walk in through the front door they would have been immediately confronted by a colony.

Bees make wonderful watchdogs. I remember when I was young I went with my father to pick up several colonies he had purchased from an old recluse who lived half way up one of the Catskill mountains. We arrived early in the morning just as the man was getting out of bed. We stapled the hives and were about to put them on the truck when the old gentleman suddenly let out a little whistle, walked over to one hive, removed the cover, puffed in some smoke, lifted out a comb and removed a flat tobacco tin such as were popular for holding pipe tobacco at the time. "My $600 are in there", he said with a grin, and I would like to keep it."

Answers to ?Do You Know?

1. **False** Honey has by no means been proven to cause infant botulism, but it has been shown conclusively to be a risk factor associated with the condition. Since there may be a risk of infant botulism if honey is fed to infants under 1 year of age, many individuals/organizations do not promote the feeding of honey to infants.

2. **True** *Clostridium botulinum* is the causative agent for infant botulism. This bacterium is as common and widespread as dust, and its spores are present in and on a wide variety of agricultural products such as fruits and vegetables. Honey is no exception and it is estimated that 10% to 15% of all honey is contaminated by botulinal spores. With infant botulism, the spores are ingested and germinate/multiply in the infant's intestine, releasing the deadly toxin.

3. **True** Parthenogenesis is the development of young from unfertilized eggs. In honey bees, the unfertilized eggs produce drones.

4. **True** The wings of a bee consist of membranous, two-layered fused extensions of the body surface. Throughout the membranes are thickened, supporting structures called veins which serve as blood vessels.

5. **True** Even though drones have highly developed eye sight, they are more prone to drifting between colonies than are worker honey bees.

6. D) Tracheal mites
7. C) Wax moth larva
8. B) Apis mellifera mellifera
9. D) Lloyd R. Watson
10. D) Almonds
11. C) Five

12. Honey color from the same floral source will vary with the soil type in which the honey plant is found and weather conditions at the time the nectar is being produced. When flowering is delayed resulting in an intense flow, honey color is often lighter than when the reverse is true.

13. A. Trapping bees out of a cavity or structure is a very slow process, taking several weeks.
    B. You will never get the queen, brood, wax combs or honey.
    C. Often the feral colony will have multiple entrances, which reduces trapping efficiency.

14. A. Treating the woodenware with wood preservatives such as pentachlorophenol.
    B. Painting the wooden parts.
    C. Coating the woodenware with paraffin and resin.
    D. Placing the hive up off from the ground.

15. A. Skunks will raid bee yards nightly, consuming large numbers of bees, thus hampering the development of strong colonies. Besides rapidly depleting the bee population, skunks make a colony very aggressive and mean since they usually return night after night.
    B. Feeding occurs at night and such attacks are most common in the spring, however, they also can occur throughout the summer and fall.
    C. The hive fronts are scratched and muddy with the grass in front of the hives packed down and torn up. In addition there will be small piles of chewed up bee parts (cuds). The skunk chews the bees until all the juices are consumed, then spit out the remains.

16. Different approaches used by beekeepers to protect colonies from bear damage include:
    A. Building electric fences around apiaries.
    B. Placing colonies on large platforms built high off the ground.
    C. Keeping colonies in old livestock semitrailers, old school buses etc.
    D. In some states, beekeepers are allowed to shoot bears when they are caught in the act of destroying property.
    E. The Game Commission will often trap nuisance bears and transport them to new geographical locations.

There were a possible 25 points in the test today. 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 GLOBE

AUGUST, 1992 ALL THE NEWS THAT FITS

To Study Africanized Honey Bees

GROUND BREAKING FOR NEW BEE LAB IN WESLACO, TX

A ground-breaking ceremony marking the beginning of construction of the Agricultural Research Service's Honey Bee Research Unit's new laboratory building was held in Weslaco, Texas, on July 6.

The Honey Bee Research Unit, which is colocated with the Texas A&M University System Experiment Station and Extension Service in Weslaco, is primary site for ARS research on Africanized honey bees (AHB) as well as tracheal mites.

The Honey Bee Research Unit is part of ARS's Subtropical Agricultural Research Laboratory (SARL). ARS is the chief scientific agency of the U.S. Department of Agriculture.

Scientists in the Honey Bee Research Unit maintain traplines to monitor wild honey bee populations and study changes taking place as AHB's become more prevalent in southern Texas.

The first AHB swarm identified in the U.S. was found in an ARS bee trap, seven miles west of SARL on Oct. 15, 1990.

In addition, researchers in the lab have helped make major advances in developing chemical controls to combat tracheal mites.

"The SARL Honey Bee Research Unit is an essential part of our program to help maintain a healthy bee population and industry in the U.S.," said the ARS administrator R. Dean Plowman, who will speak at the ceremony.

Promo Logo

FEDERATION DEVELOPS LOGO FOR JAN. MEETING

The MO-Kan Host Committee of the American Beekeeping Federation 50th Anniversary Convention has selected a logo submitted during the contest, judged by the nine members of the committee plus a graphic artist.

The winning entry was submitted by Jodi Conners of Holton Michigan, (she was the Michigan State Honey Queen), who will receive a check for $25.00, a T-shirt, sweatshirt, cap and mug with the logo on them. The purpose of the contest IS to generate interest for the ABF Anniversary Convention that will be held in Kansas City in January of 1993.

In China In '93

APIMONDIA CANCELLED, AGAIN

The 1992 meeting of Apimondia, the International Federation of Beekeepers' Associations, has been cancelled due to the hostile political events in Yugoslavia. The meeting, to be held in Split, was cancelled last year for the same reasons.

As a result the next meeting will be held in Beijing, China, on 20-26 September, 1993. For more information contact: Apimondia, General Secretariat, Corso Vittorio Emanuele 101, 1-00186 Rome, Italy.

Apple Growers Killing Bees

PESTICIDES CAUSING PROBLEMS IN B.C.

British Columbian beekeepers are reconsidering the spring ritual of renting and placing hives in orchards to assist in pollination.

This because the careless pesticide use is devastating Okanagan honey bee populations this year.

Beekeeper Colin Pullein of Winfield, B.C., said the death of bees pollinating blooming fruit trees was especially bad this spring in the Kelowna area.

"We appeal to orchardists to consider the full ramifications of spraying at pollination times," said Pullein, president of Kelowna Apiaries.

Pullein, who puts up to 600 hives in area orchards for pollination each spring, said bee populations are devastated when growers spray apples and pears prior to the bloom when bees are pollinating neighboring orchards.

He said this has wiped out many bee colonies.

"We want growers to change spraying methods at pollination time next spring," he said.

Tariff Sticks

MEXICO DENIED PRIVILEGES

U.S. Trade Representative (USTR) Carla Hills has *denied* a petition from a Mexican honey company asking that the U.S. tariff on honey from Mexico be dropped.

The petition from the Mexican cooperative, Apiario el Borullo, asked that the USTR add honey to the Generalized System of Preferences. This is a procedure under which imports from developing nations gain easier access to markets in industrialized nations.

If this action had been granted by the USTR, the U.S. import tariff on honey would have been removed for honey from Mexico and the other 136 nations which are eligible for GSP benefits. The procedure would have ended the tariff on honey from eight of the 18 largest suppliers of imported honey: Argentina, Hungary, Guatemala, Dominican Republic, El Salvador, Brazil, and Honduras.

Dropping the tariff to the GSP countries would effectively end the U.S. honey tariff, since more than 50% of the United States' imported honey comes from GSP beneficiary nations.

"The effect could be to lower all prices, for both imported and domestic honey, by 1-cent," warned ABF Secretary Troy Fore. "While the U.S. honey tariff is relatively low – 1-cent per pound – the tariff is very important to U.S. honey producers who are facing bleak economic prospects.

"The import tariff gives the domestic producers a slight edge in the highly competitive marketplace with foreign producers," Fore noted.

USDA UNDER REVIEW

The U.S. Department of Agriculture is responding to a move by members of Congress to evaluate the effectiveness of the department and explore ways of improving its efficiency.

The staff of Indiana Senator Richard Lugar has been gathering information from USDA regarding the department's field office locations, staff sizes and related issues. Lugar is the ranking member of the Senate Agriculture Committee.

Meanwhile, Agriculture Secretary Edward Madigan has asked Deputy Secretary Ann Veneman and House members Pat Roberts of Kansas and Charles Stenholm of Texas to serve on a task force to look at the issue. The panel held a "listening session" in March in Salina, Kansas to solicit input from interested individuals and organizations.

More Future Farmers

FFA GAINS MEMBERS

A grassroots effort to interest junior high and high school students in agricultural education and FFA has resulted in the first membership increase in 14 years for the National FFA Organization. Total membership to date for 1992 is 400,552, a gain of 17,804 students from last year.

The increase in FFA membership means that more students are enrolled in agriculture courses and are pursuing careers in agriculture. Larry Case, coordinator of agricultural and rural education for the U.S. Department of Education, said, "An increase in FFA membership is a very encouraging sign for the agricultural industry. The growth translates into more potential employees who have a greater appreciation and understanding of agriculture. It also shows that students, parents, school administrators and guidance counselors are beginning to realize the tremendous career opportunities available in agriculture."

The growth spurt comes none too soon from industry's perspective. The U.S. Department of Agriculture forecasts significant shortages of qualified workers in agricultural science, engineering, management and finance, marketing, merchandizing, sales and social services.

FFA is a national organization of more than 400,000 members in 7,744 local chapters throughout the United States, Puerto Rico, Guam and the Virgin Islands preparing for leadership and careers in the science, business and technology of agriculture. Local, state and national activities and award programs provide opportunities for students to apply knowledge and skills acquired through agricultural education. FFA members strive to develop agricultural leadership, cooperation and citizenship.

PRETTY POSTERS

Four beautifully detailed rainforest posters by renowned nature artist Earl Bateman have been commissioned by the Jane Goodall Institute for Wildlife Research, Education & Conservation. The four full-color posters: the Neotropical Rainforest, the Northwest Coast Rainforest, the African Rainforest and the Southeast Asia Rainforest are three-dimensional and glow in the dark. Each measures 24"x 36" and includes a 16-page booklet. They are available for $11.95 each ($43.00 set of four) from Celestial Arts, P.O. Box 7327, Berkeley, CA 94707; (800) 841-2665.

ABF & 4-H Are Winners

ESSAY WINNER HAS BEES

"I never realized that honey bees could be so important to the world's food supply," wrote Cassie Sue Mitchell as she concluded her first place winning effort in the 1992 American Beekeeping Federation 4-H Essay Contest. The topic for the 1992 essay contest was "The Results of Honey Bee Pollination in My Community."

The 11-year-old daughter of Randy and Sue Mitchell of Warner, OK, will enter the sixth grade this fall. Just completing her second year in 4-H, she has already won several awards and has been vice president of the Warner Junior 4-H Club. Being first place winner brings Cassie a $250 cash prize.

"Honey bees are by far the most important pollinators," she wrote. "Honey bees carry out more cross-pollination than any other insect. My neighbors, my family, and I eat a lot of foods that result from honey bee pollination. Some of the foods are cabbage, pears, broccoli, watermelons, apples, plums, cucumbers, and cherries. As a matter of fact, we have a beehive on our 20 acres. The honey bees help pollinate our fruit trees and vegetable garden."

Turning in the second place essay was Ellen Whitaker of Oak Ridge, NC. She pockets $100 as her prize.

Ellen observed the contribution of honey bee pollination toward foodservice meals: "One cannot dine out here without eating a crisp salad including cucumbers, carrots, cauliflower, and radishes. Yes, honey bees are responsible for many of the fruits and vegetables in our local restaurants, from the slaw on hot dogs to the low-calorie fruit plates heaped with watermelon, cantaloupe, and strawberries."

Matthew Hoadley of Pittsfield, NH, was the third place winner, for which he gets $50.

He noted the move to add salads to the menus at fast food restaurants: "With today's emphasis on health, the main attraction at many restaurants is the salad bar. Salads are offered as an alternative to burgers and fries at Burger King and McDonald's. Pizza Hut offers a salad bar of fresh fruits and vegetables. Pickles, onions, tomatoes, and lettuce are often additions to a sandwich. Fresh fruit salads are available at many restaurants for an added variety."

These three and the other 23 state winners will each receive a copy of beekeeping book. The topic of the 1993 ABF 4-H Essay Contest is "New Honey Promotion Ideas." Complete rules and details on entering are available from local 4-H agents.

Newsletter Available

CARIBBEAN BEEKEEPING GROUP FORMS

The Caribbean Apicultural Development Association (CADA) was formed in response to information shared at the First Regional Training Workshop for Beekeepers, May 11-13, 1992, Castries, St. Lucia. Fifty-six beekeepers and officials involved in apiculture from 19 nations met to exchange technical information and discuss apicultural development problems in the region.

The Florida delegation to this Workshop was Dr. M.T. Sanford, Extension Apiculturist, Univ. of Florida and Mr. Laurence Cutts, Chief Apiary Inspector, Florida Division of Plant industry.

The first project for the new association is a newsletter sent to a large mailing list throughout the Caribbean. At present, there is no limitation on membership and you are asked to pass on this information to beekeepers, officials and others interested in beekeeping development in your area. In addition, your news about apicultural happenings in the Caribbean should be communicated to the editor of the newsletter, Dr. Pesante, at University of Puerto Rico, Animal Science Dept. College Station, 5000 Mayaguez, P.R. 00681.

From New Zealand

ROYAL JELLY UPDATE

New Zealand beekeepers are being encouraged to cash in on a growing demand for royal jelly.

The marketing research unit at the University of Otaga reports New Zealanders now consume more than NZ$1 million (US$620,000) worth of royal jelly products every year and almost all of it is imported.

There are 6,210 beekeepers and 25,786 apiarists operating 318,203 hives in New Zealand and Ron van Toor, a Ministry of Agriculture and Fisheries (MAF) scientist, believes they cannot only make money by producing royal jelly but also save the South Pacific country – which has to import much of its manufactured goods – a chunk of valuable foreign currency.

"There is enormous potential for New Zealand beekeepers to supply this market and create a small viable royal jelly industry, but it has to be done correctly," van Toor said.

"Production needs to be market related," van Toor said. "There has to be a constant and reliable supply at a competitive price and there has to be attention given to good beekeeping practices."

Van Toor has also carried out extensive trials on royal jelly production at MAF research centers at Invermay, Tara Hills and Manurewa.

The result is a detailed package advising how beekeepers can set about the jelly's commercial production.

Van Toor has worked out how a beekeeper can maintain and service 30 hives for royal jelly production, giving the amount of time needed to service a hive and produce 10 grams (about 2.2 ounces) of jelly every three days.

His field trials showed protein supplements can increase yield and he has created "protein patties" which supplement the bees' diet and encourage them to produce more royal jelly.

The package also includes information about hive design and the equipment beekeepers will need, including plans for a specially designed vacuum pump.

His offers information on site selection, diseases, packaging and step-by-step management procedures as well as on marketing options and business structures.

MAF is selling the package for NZ$57.50 (about US$36), including New Zealand's 15 percent goods and service tax.

Those interested can write to MAF Technology, Invermay Agricultural Center, Private Bag, Mosgeil, New Zealand.

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New Zealand scientists are trying to come up with a poison bait that works on opossums but is not attractive to bees.

Jam paste laced with poison is a key killer in New Zealand's opossum control program, but bees like the taste as much as the opossums and beekeepers have been seeking a ban on the poison's use in areas near their hives.

But MAF is reluctant to ban it because it is effective in controlling opossums and thus stopping the spread of tuberculosis to cattle.

Any ban could increase the incidence of bovine tuberculosis and about 3.5 percent of New Zealand's cattle herd already contain tuberculosis reactors – a figure much higher than the internationally accepted standard of 0.2 percent.

New Zealand's beekeepers – perhaps more than most – are subject to the vagaries of weather. The two relatively small South Pacific islands that make up most of the country mean wide swings in climatic conditions not only from year to year, but at times from day to day.

In the year ending May 31, 1990, New Zealand produced 8,752 tons of honey. That was well up on the summer-long drought season of 1988-89 when only 5,752 tons were harvested. The best return in recent years was in the 1985-86 period when production went over 10,000 tons. About a third of the production is exported, with Japan the main market along with Germany.

There are 1,000 kilograms to a ton which converts to 2,200 pounds.

New Zealand beekeepers are looking to the U.S. as a way to increase their earnings. Talks are continuing between agricultural authorities in the two countries about allowing exports of New Zealand queens and bee packages into the U.S. and the New Zealanders are confident approval will come soon.

Last year New Zealand exported some 30,000 one-kilogram packages of bees, with Canada the biggest market, followed by the United Kingdom, Japan, France, Portugal and Pacific island countries and territories. The exports were worth NZ$300,000 (US$186,000) FOB.

With North America's growing mite problem, New Zealand beekeepers see live exports to the U.S. as a potentially profitable boost for their industry.

From Canada

MANITOBA HOLDS OUT

Proposals to restudy the ban on imported bees and queens from the mainland U.S. and Hawaii have been defeated at the annual meeting of the Manitoba Beekeepers Association.

Proponents argued that as there is no effective treatment for the Acarine and Varroa mites already in Canada the association should study the possibility of asking the Canadian government to reopen the border to allow the importation of treated bees and queens.

They said Hawaiian queens would have a positive economic impact on the Canadian honey industry if they could be imported with no risk of mite infection and proposed that the association support the process of developing a suitable protocol for their safe importation.

But all three proposals on the subject were defeated. However, at a separate meeting, the Canadian Honey Council voted to accept the proposed protocol for importing queens from Hawaii.

The increased loss of bees in recent months because of the spraying of insecticides, herbicides and fungicides drew calls for action.

The meeting passed a resolution calling for the association to approach the Manitoba government and the Keystone Agricultural Producers Group to ask that farmers and custom applicators be licensed to use the chemicals.

The resolution also called for an educational program for chemical applicators, including having them learn to monitor fields before applications, to use chemicals that are less harmful to bee populations, and to apply the chemicals during suitable weather conditions or when bees are less actively foraging – early mornings or evenings.

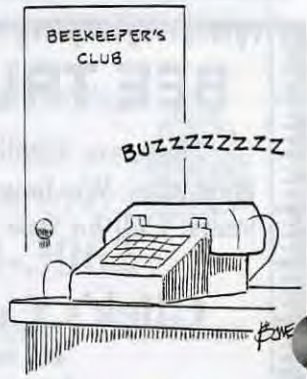
The Manitoba honey producers also want a more even playing field in their competition with other sweeteners and spreads.

While the competition is allowed a variety of shapes, sizes and colors in their packaging, proposed regulations would restrict honey to specified sizes and types of containers.

The result, they said, is that honey would go unnoticed beside other more attractively packaged products.

The producers voted in favor of informing the Canadian Honey Council that it wants Agriculture Canada to omit the requirements on container size for retail honey.

The council, however, rejected the proposal at its annual meeting. It did support a proposal to add a provision to the regulations defining a "novelty container" as one of an unusual shape or design which is not mass produced and which contains 250 grams or less of honey.



Display Index

Until We Mead Again

MIKE DRUMMOND

One of my neighbors stung me for almost $1,000 before he suddenly left town. He slipped a note in my mailbox advising me to "liberate" what I wanted from his barn before the rest of his creditors started swarming about. There wasn't much to choose from, but a stack of shabby-looking beekeeping boxes in the corner caught my eye. They would be good for storage, I thought. Or, even if they weren't too super, I could chop them up for kindling. The boxes were heavier than I expected and the lids were stuck on tight, so I loaded the truck and buzzed on home.

My wife hovered expectantly as I pried open the first box.

"Where's the money, honey?" she asked.

"No money, honey, but there's honey, honey," I said.

"I love honey, honey," she smiled.

We both liked honey, but had no idea what to do with 400 pounds of it. Our friends wouldn't buy it even though I insisted it tasted great, which it did. The problem was the color, which was an unappetizing shade of "brain cell grey"

What to do? As usual the answer came as we reflected on the snippets of a PBS documentary during one of their interminable pledge breaks. The show, entitled "Norse Code", and sponsored (excuse me, underwritten) by the Fjord Foundation, dealt with everyday life among Viking-types a thousand years ago.

"Didn't the vikings drink *mead* from staghorn flagons?" I asked

"Uk! That's probably why so few of them are pillaging Europe today."

"One man's mead is another man's poison," I agreed. But I was excited. "Mead is made from honey, honey. We can make our own wine, honey. Honey wine!"

Vivid visions of our last winemaking escapade flashed before my wife's eyes. It had been ripe banana wine.

"Count mead out," she said. "I'm not stomping around in a vat filled with combs while you take pictures and giggle."

"You have a fine memory," I said, trying to salvage something from the conversation.

So it was I who donned some old, but clean, argyle socks and hopped up and down on the honey combs until they (and my footwear) began to release their essence. It was like putting my feet in jello. In retrospect, the stomping probably wasn't necessary, but I am something of a traditionalist when it comes to winemaking.

A handy hint if you try this: unless you are adept at walking on your hands, decide how you will transport yourself to clean-up facilities *before* you step into the stomping vat.

I siphoned the final murky liquid, along with the yeast and other ingredients into five-gallon winemaking jugs. I told myself that everything would settle to the bottom during the filtration process like the green and red argyle sock fibers (or were those leg hairs?) that swirled about in the gloom. I shared the uncertainty of novice winemakers everywhere. But uncertainty and winemaking are both centuries-old traditions in my family. I began to wax nostalgic for the good old daze, and I certainly had the residual beeswax to do it.

I also looked forward to the day when I could lounge in my castle and tip back my horned battle helmet as I enjoyed a staghorn filled with my own honey wine and a plate of french fries. (I'm a mead and potatoes man, you see.) But mostly I envisioned the day when I could present visitors to Clear Creek Ranch with a gallon or two of our estate bottled gray stuff as they headed home.

"Until we mead again," I'd say.

BOTTOM·BOARD