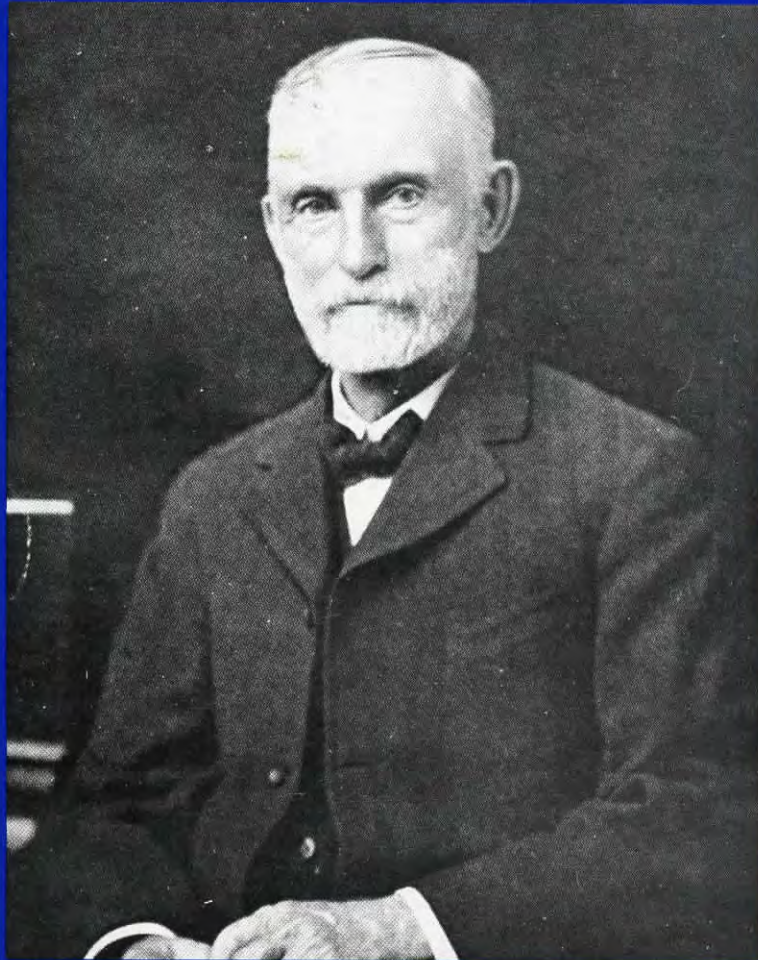


GLEANINGS IN



JAN '88

# BEE CULTURE



115 YEARS . .



# JANUARY CONTENTS

(ISSN 0017-114X) Vol. 116, No. 1  
115 Years Continuous Publication by the Same Organization

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*In the first of a three part series, Mr. Taber explains, in understandable terms, the basics of bee genetics and the heritability of some important characteristics.*



- **BEEKEEPING IN YUGOSLAVIA** ..... Ron Miksha 23  
*Not since 1959 has such an indepth study of beekeeping in this country been conducted. Equipment, production, diseases & pests, marketing — all explored as only a beekeeper can.*



- **IN THE BEGINNING** ..... Editorial Staff 30  
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## NEXT MONTH

February is probably the least active month for beekeeping, but preparations for next season, along with dreams of an abundant honey harvest, run rampant for most of us.

So next month we're going to concentrate on some proven methods to help you get those fantastic results we all know we're capable of.

Of course, we'll have the second of Steve Taber's Three Part Series on Honey Bee Genetics. After you've read Part One I'm sure you'll agree that discovering the basics is not only easier than you thought, but Steve's unique style makes it enjoyable.

Bee Pasture continues to be of interest to beekeepers because it seems to be steadily declining. Roger Hoopingarner and George Ayers of MI State University have taken a historical look at this situation, and offer some real world suggestions for reversing this trend. This is Beekeeper to Farmer, not growing your own, which is not possible for many of us.

We've got an excellent piece on smokers, and how to keep them going next month, too. Even the experts run out of smoke when they need it most, on occasion, so catch this one for some "hot" reading.

Europe has been dealing with Varroa for quite some time now, and although it hasn't been the 'end of beekeeping as we know it', which is often heard, it remains a problem. Our contributing writer from Poland, Piotr Jurga, has provided us with some insights on control, both chemical and management, used there. It is an excellent look at how they are dealing, and thriving with our newest pest.

And, we've got an article entitled "A Guaranteed Way To Improve The Size Of Your Honey Crop". The title alone is enough to make most of us foam at the mouth. But the article will certainly help keep your extractor working overtime next season.

So, all this, plus other tidbits and such are coming your way — In February. §

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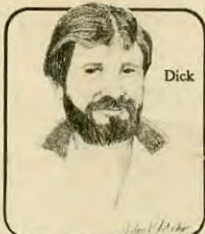
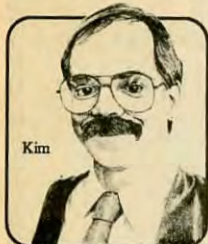
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# THE INNER COVER

Mr. A. I. Root  
P. O. Box B  
Upper, Apiary

Dear A. I.,

Just another note to update you on how the beekeeping world is going since I last wrote. I guess that was about a year ago — where does the time go I wonder?

As I'm sure you're aware, your little "Journal" has reached its' 115th birthday this year. That's quite an accomplishment, of which I'm sure you feel quite proud. In many ways beekeeping has not changed much since that original issue. Beekeepers still have to deal with wintering, swarming, queen rearing, diseases and the like. Although we haven't really solved any of these, we have managed to deal with them, and for some things a solution may yet be found.

But there are three items that have not been solved yet, and are keeping all of us busy in one way or another. Of course I'm referring to tracheal mites, Africanized bees and varroa mites — certainly the three musketeers of beekeeping headaches at the moment.

Tracheal mites and Africanized bees are really an old story I guess, so I won't bother you with them. But this varroa thing is really a bug-a-boo.

Recently discovered in this country, quite unexpectedly I might add, it has caused a great deal of concern among beekeepers, queen and package producers and regulatory officials. I'm not sure what the final outcome will be, so if you've got any good ideas, or the Boss has given you any insight on the future outcome of this thing I wouldn't mind it a bit if you shared some of your information. Maybe an anonymous letter to the Editor, or a phone message left when I'm not in the office — I won't tell where it came from — trust me!

I mentioned last year the self-help program that had just started, and it has really gone gang busters since then. National ads, surveys, advertising agencies — boy, those folks have really done a job. Marketing honey has always been a problem, (or at least getting your moneys worth for it), but my money is on The National Honey Board going a long way in solving that age old stickler. Did you have anything to do with picking the folks who are working there?

I guess asking you for some help with the weather situation last year must have done some good, because it seems to have improved a bit this year — along with honey production. It wasn't perfect though, so next year, if you get the Bosses ear, see what you can do to move it along a little, O. K.?

As long as I asking favors, do you have any influence with young people these days? I don't know why, but it seems there just aren't very many interested in beekeeping. But I guess that's probably been the situation since before you were here, right?

Anyway, if there's anything you can do along those lines — I don't know, maybe lightening bolts or a popular rock 'n roll or country western song would help. If you have a good thought on what might work, that anonymous letter to the Editor idea still holds — I promise I won't let on where it came from.

Trying to sum up a whole year in this short letter is not really possible, so I guess I'll close for now. I should write more often I suppose, and I'll try this year. Do keep in touch though, and say hello to all the beekeepers in Upper, Apiary for us.

Sincerely,  
Kim Flottum

In classic, bureaucratic style, the U. S. Government has decreed that our industry should have a National Apicultural Extension Agent. They have outlined the mission and goals of the position, selected a well qualified individual to fill the job, started him on the tasks assigned — and not yet funded the position.

If you are familiar with Government red tape and other fal-de-ral, this is no surprise. In fact, for those who deal with it on a routine basis, it is just that — routine.

I'm speaking, of course, about Dr. James E. Tew, currently also employed by the State of Ohio in a variety of positions, including Professor, State Extension Agent and even more. For those of you who aren't familiar with Dr. Tew, he lives and works (primarily) in

*Continued on Page 46*



# January Honey Report

January 1, 1988

The following figures represent current prices reported by our contributors. They are based on reports from many states averaged out for each region. Where insufficient information is received, no price is shown. The retail prices represent the price of each size jar.



Wholesale Extracted	Reporting Regions									
Sales of extracted, unprocessed honey to Packers, F.O.B. Producer.										
Containers Exchanged	1	2	3	4	5	6	7	8	R	A
60 lbs. (per can) White	43.00	39.20	35.00	26.40	45.50	36.27	38.80	40.50	26.40-50.00	38.53
60 lbs. (per can) Amber	43.00	34.82	29.00	22.20	40.10	36.83	36.25	37.40	22.20-47.50	36.00
55 gal. drum/lb. White	.65	.55	.55	.44	--	.60	.61	.52	.37-.66	.57
55 gal. drum/lb. Amber	.60	.50	.50	.37	.41	.47	.55	.46	.32-.60	.49
Case lots -- Wholesale										
1 lb. jar (case of 24)	28.50	26.87	27.50	25.95	24.00	24.72	25.75	25.20	23.00-33.60	25.95
2 lb. jar (case of 12)	27.50	25.83	25.00	22.75	23.50	23.30	27.51	--	21.60-32.40	25.20
5 lb. jar (case of 6)	30.00	26.80	23.00	25.95	30.00	24.27	26.63	25.50	23.00-30.00	26.01
Retail Honey Prices										
1/2 lb.	.95	1.12	.84	.85	.91	.86	.87	.89	.82-1.29	.92
12 oz. Squeeze Bottle	1.50	1.63	1.34	1.39	1.35	1.15	1.39	1.35	1.20-1.89	1.40
1 lb.	1.50	1.68	1.69	1.55	1.61	1.59	1.47	1.32	1.25-1.89	1.56
2 lb.	2.70	2.92	2.99	2.85	2.60	2.64	2.84	2.25	2.25-3.70	2.76
2-1/2 lb.	3.35	4.13	3.97	--	3.30	3.26	3.71	--	3.25-4.85	3.59
3 lb.	4.00	4.15	--	3.25	3.47	3.90	3.79	3.37	3.25-4.85	3.74
4 lb.	5.00	4.90	5.89	3.95	4.55	4.73	4.85	--	3.95-5.89	4.77
5 lb.	6.00	6.05	6.50	5.75	5.75	5.27	5.98	5.59	5.25-6.50	5.79
1 lb. Creamed	1.75	1.55	1.70	1.55	1.65	1.61	1.65	1.65	1.29-2.00	1.64
1 lb. Comb	2.25	1.85	2.60	2.75	1.75	2.05	2.00	1.95	1.75-2.75	2.11
Round Plastic Comb	1.75	1.75	1.55	1.85	--	1.80	2.35	1.65	1.55-2.95	1.87
Beeswax (Light)	.95	.97	1.00	1.10	1.50	.91	.95	1.10	.85-1.50	1.02
Beeswax (Dark)	.85	.87	.90	.85	1.00	.85	.83	.92	.70-1.10	.86
Pollination (Avg/Col)	30.00	--	--	27.50	18.00	20.75	23.00	25.50	18.00-30.00	23.88

## Honey Report Graph Features

On the far right hand side you will see two different columns. The first, labeled "R", is the price range of prices reported from all contributors -- lowest to highest. The second column, labeled "A", is the average price of a particular commodity across all regions. Example: the range in price of a 1 pound jar of honey sold retail is \$1.25 - \$1.89 and the average price across the country is \$1.56.

In the comments section you will see a figure called the "Price Index". This figure is only a descriptive statistic that compares ALL regions to the highest region of the month.

Example: Region 5 has a price index of 1.00 this month and remaining regions are compared to that index.

### •Region 1.

Price Index .95. Sales slow, but somewhat better than last year so far. Prices steady, but falling just a bit. Bees in good shape generally, and settled in for the long wait. Colonies available for pollination may be short this spring, as beekeeper losses are increasing.

### •Region 2.

Price Index .87. Prices steady to higher, with sales increasing generally due to holiday and seasonal uses. Honey recipes to customers work! Colony conditions variable due to fall weather, some areas dry and bees are short of supplies. Other areas in good condition. Check for problems.

### •Region 3.

Price Index .84. Prices steady to declining somewhat. Sales below normal for this time of year. Buyback is having some affect. Colonies generally light due to short fall crop, so be on the watch for feeding.

### •Region 4.

Price Index .74. Sales and prices increasing, but not as rapidly as predicted. Summer crop generally good, but southern areas still dry. Feeding in dry areas will probably be needed.

### •Region 5.

Price Index 1.00. Prices and sales doing well, mostly due to seasonal uses. Adequate rain and fall weather have helped winter stores. '87 crop shorter than expected, but short supply will probably help prices.

### •Region 6.

Price Index .82. Sales slow for this time of year, but prices steady to increasing a bit. Bees generally in good shape, but isolated areas had poor fall crops so be on the watch for light colonies.

### •Region 7.

Price index .87. Sales normal, but prices unsteady. Local and brand name honey is generally higher priced than 'store' brands, causing a mixed bag of sales statistics. Region generally dry with moisture needed before spring for good spring crops.

### •Region 8.

Price Index .84. Prices and sales steady. Winter crops early this year in southern CA and almond pollination heating up. Wax sales strong in Nov. due to holiday candle business. Northern areas dry and cold, with bees generally in good shape. Sales slower here.



# MAILBOX

10238 Mile Rd.  
Chardon, Ohio 44024

The Editor  
P.O. Box 706  
Medina, Ohio 44258

## Humble Headline

Dear Editor,

In the November issue I almost skipped over the article entitled "Of Mites and Men (Again!)". Actually, I think you blew it. The headline should have been in the biggest type size available right on the cover, reading "Varroa Found in U.S.". Unfortunately this infestation has some things in common with the outbreak of tracheal mites. Especially the part where "APHIS officials were quoted as saying that they were completely unprepared for this sort of problem . . . and had no plan of action". For a bunch of otherwise intelligent people to be caught unprepared for this is about the dumbest thing I've heard in years. People, this is serious! Check your hives ASAP! Ignore the problem and you'll have no bees. Think of it like a fire in your home — jump on it with both feet, yell for help, destroy it before it ruins you. Like the song a few years ago said "Somebody do something! The present situation is abstract!"

Robert Cucullu  
P. O. Box 301  
Sedona, AZ 86336-0301

## Crafty Containers?

Dear Editor,

The fall harvest and craft festivals, by any other name, are a great opportunity for the hobby beekeeper to set up and sell his honey.

However, the containers we have available to us from the bee supply firms are the same ones that the honey buyer will find on the shelves of the supermarket. This was brought to my attention when one customer asked, "Why do you use the same type of container as we see on the supermarket shelves? The crafts

and baked goods at the other booths are all home made. Your packaging should also look home made."

Just thought that I should pass this along for comments from others that might have had this experience.

Donald Cox  
1623 W. Wayne  
Lima, OH 45805

## Caution Must Be Used

Dear Editor,

The recent discovery of the Varroa Mite is the most serious problem the American bee industry has ever faced. It is already apparent that speculation on the extent of the infestation, without substantive documentation of fact, may be made by some individuals. Misleading or uninformed statements can cause irreparable harm to our industry.

The California Bee Breeders Association, Inc. urges you to use your editorial discretion to eliminate such statements from articles submitted to you for publication.

*Gleanings in Bee Culture* is a respected source of information for the entire industry. We appreciate all that you have done for beekeeping and show our support with advertising dollars. We hope that through cooperation the beekeeping industry will overcome the problems facing us. Keep up the good work!

Carol Penner  
Secretary  
California Bee Breeders, Inc.

## A History Update . . .

Dear Editor,

The author of "Bee Space", October, 1987 (page 573), will probably be as surprised as your readers to learn that L. L. Langstroth did not invent, nor discover, the principle of the bee space. Apparently the initial assumption is that Langstroth would have had to invent the bee space before he could develop his patent hive.

Langstroth's five claims for his hive do not include the bee space. He lists a chamber for boxes and tumblers to be filled with honey comb, a hive divider, double glass sides, and a moth trap. His movable frames were provided as an *alternative* to the movable bars or slats already in use. The frames were supposed to avoid the combs built from bars being fastened to the sides of the hive. This has proved a spurious concern with the recent successful renaissance of bar hives.

The Russian hive developed by Pyotr Ivanovitch Prokopovich in 1814 had an insert with removable frames, and was described in American agricultural papers and an encyclopedia by 1845. The development of the modern movable comb hive was the culmination of efforts begun by Jan Dzierzon in 1835, and reported in various German bee journals read by Samuel Wagner. Wagner was so impressed with Dzierzon's 1841 book that he intended to publish an English translation. Instead he turned the manuscript over to the Langstroth who was writing his book on the *Hive and the Honey-bee* (1853). The importance of Dzierzon's contributions to the project can be judged by reading Wagner's letter in the Preface, and the final paragraph in Langstroth's book: "I can not allow this work to come to a close without acknowledging my great obligations to Mr. Samuel Wagner, of York, Pennsylvania. To him I am in debted for a knowledge of Dzierzon's discoveries, and for many valuable suggestions scattered throughout the treatise."

Dzierzon did not attempt to obtain a patent on his hive, but he was widely honored and acclaimed for his many contributions to apiculture. Langstroth did obtain a patent, and joined into partnership with Richard Colvin and Wagner for its promotion. Colvin had received a Greek hive from King Otto earlier, and Colvin's apiary served as a center for importations of foreign bees and the development and manufacture of beekeeping equipment. The illustrations and specifications of the Colvin hives in the third edition \*(1859) of

*Continued on Next Page*





# MAILBOX



Langstroth's book resemble those we associate with Langstroth, and the 1860 printing is identified as the R. Colvin edition. The hive Langstroth described in his patent bears little resemblance to the hives described in the second edition (1857) of his book. The first edition has neither specifications nor illustrations of the hive, but offers to sell the right to manufacture the hive described in Langstroth's patent.

The third edition of Langstroth's book contains much useful material extracted by Wagner from foreign

journals. An interleaved copy with Langstroth's changes for the unpublished fourth edition includes descriptions of frame hives that preceded his own, and used as evidence to contest his patent rights. The inventor of one such hanging bar-frame hive described in *The Scientific American* in 1847 was well known to A. I. Root.

\*Readers interested in additional information can consult the article in *Bee World* 48(4):133-143 (1967), and reprinted in *Some Important Operations*

in *Bee Management* (1978) by T. S. K. and M. P. Johansson. James Walton read the article and contributed "The men behind the beehive" in *Bee Craft* August 1975, page 150-153. It is moot whether his effort was any more successful in persuading the beekeeping establishment that the concept of the bee space had been known a very long time before Langstroth learned of its existence, and joined the others before him who had incorporated the principle in a hive.

Toge S.K. Johansson  
RD 1, Box 256A  
East Berne, NY 12059

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By CLARENCE H. COLLISON  
 Pennsylvania State University • University Park, PA 16802

The beekeeping industry has been struggling for many years to overcome the problems associated with depressed honey markets. While many factors have contributed to the industries economic problems, honey imports, adulteration and the honey loan program give-a-ways have certainly compounded the problem. As a result, honey promotion and principles of marketing have received a great deal of press in the past few years. One suggested problem to the situation always seems to be "we need to increase honey per capita consumption in the United States". Finally, after many years of hard work by several different beekeeping organizations, we have a national honey board elected and they have been charged with the task of promoting honey in the United States. While we anticipate this board and the advertising agency that they have hired, to accomplish a great deal in the promotion of honey, we still need to continue promoting honey in our own local communities. In a large part, we need to do an excellent job of educating consumers so that they will be more familiar with honey and its characteristics and uses. We also need to strive to continue producing a high quality product, so we will increase the number of repeat customers. Recently, our national honey board sponsored a consumer market research study and it was found that 21.8 percent of all stores sampled had sticky honey containers and 28.4 percent of the stores had honey packages showing crystallization. We need to do a much better job as an industry!

Please take a few minutes and answer the following questions to find out how familiar you are with the basic characteristics and uses of honey. The first eleven questions are true and false. Place a "T" in front of the statement if entirely true and an "F" if any part of the statement is incorrect. (Each question is worth 1 point).

1. \_\_\_ Crystal size in granulated honey is directly related to the glucose (dextrose) / fructose

- (levulose) composition ratio.
- \_\_\_ Honey is a vitamin and mineral rich source of food.
  - \_\_\_ Honey packers normally blend two or more types of honey in order to market a product of uniform color and flavor.
  - \_\_\_ Honey is considered to be an instant source of energy since glucose (dextrose) is absorbed directly into the blood stream without further digestion.
  - \_\_\_ Honey may be substituted as the sweetening agent in any recipe that calls for sugar.
  - \_\_\_ Individuals that have sugar diabetes should not use honey in their diets.
  - \_\_\_ Storage of honey below 50° F. will prevent honey fermentation regardless of yeast and moisture content.
  - \_\_\_ Low moisture honeys granulate faster than high moisture honeys.
  - \_\_\_ In substituting honey for sugar in recipes, reduce the total amount of other liquids by 1/2 cup per cup of honey used.
  - \_\_\_ In cooking with honey, the acidity of honey can be neutralized by using 1/12 teaspoon of baking soda per cup of honey used.
  - \_\_\_ The best time to reduce the moisture levels in honey is after the honey has been extracted.

### Multiple Choice Questions (1 point each)

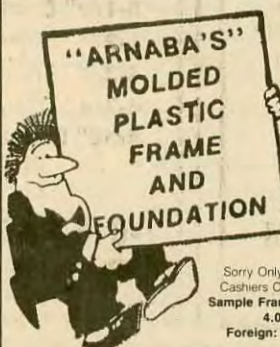
12. \_\_\_ The caloric value of honey varies slightly with honey

- type, however, the USDA reports a figure of \_\_\_\_\_ calories per pound of honey. A) 1380; B) 1420; C) 1240; D) 1560; E) 1320
- \_\_\_ The weight of honey varies slightly with moisture content; one gallon of honey will weigh approximately \_\_\_ lbs. A) 11; B) 13; C) 10; D) 12; E) 14
  - \_\_\_ When baking with honey, oven temperatures should be lowered by \_\_\_°F, since honey is more sensitive to heat than sugar. A) 15; B) 75; C) 25; D) 35; E) 50
  - What is a distinct advantage of using honey rather than sugar in the baking industry. (1 point).
  - Give two reasons for heating honey after it has been extracted. (2 points)
  - Please explain why straining honey with nylon is more desirable than using cheese cloth. (1 point)
  - Please explain why fermented honey may burst the containers in which it is stored and has a strong tendency to foam during heating. (1 point).
  - Explain why honey that has been filtered during the packing process will not crystallize even though it may contain high levels of glucose. (1 point).

### EXTRA CREDIT QUESTIONS

- In recent years, adulteration of honey has been a serious problem for the beekeeping industry. Please explain how the discovery of the bacterial enzyme glucose isomerase served as the basis of the adulteration problem. (2 points).
- Honey possesses three biological properties which either separately or together account for its antibiotic nature. Please explain how acidity, osmotic pressure and the glucose-oxidase system are involved in its antimicrobial properties. (3 points).

ANSWERS ON PAGE 41.



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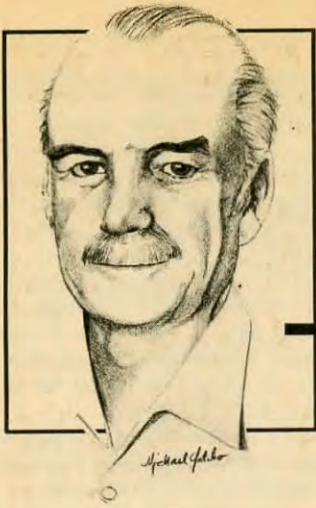
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# THE BEE SPECIALIST

By ELBERT R. JAYCOX • 5775 Jornada Road North • Las Cruces, NM 88001

*“Whether you are a beekeeper or Apiary Inspector, you had better be looking for Varroa mites this spring. Here are some tools to make it easier!”*

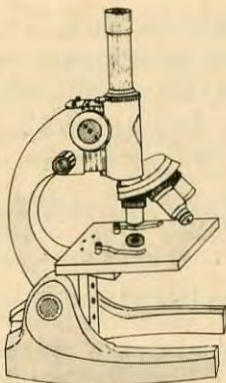
## Magnifying the Mites

**W**hether you are a beekeeper or apiary inspector, you should be looking for *Varroa* mites this spring. They are big enough to see with the unaided eye, either on the body of an adult bee or on a pupal drone or worker bee in a sealed cell. You are most likely to find some mite-like creature on adult bees because we rarely open sealed cells on healthy looking brood. The trick is to catch and immobilize it by plunking the infested bee into a container of alcohol or an insect killing jar. The next step is to make a tentative identification: is it a *Varroa* mite or is it a bee louse (*Braula* sp.), which is a



wingless fly? The mite has eight legs hidden beneath a body that resembles that of a crab. Its main axis is across the narrower part of the body. The louse or fly has six legs and its main axis is the longer dimension of its body.

To see these differences more clearly you will need some device or lens that will magnify the minute creature and make it more clearly visible. There are many choices available in a wide range of quality and prices. Simplest of all are the pocket folding magnifiers that will give you magnification of 5X to 20X for prices from about \$5.00 to \$35.00.



One unit looks like a penlight and gives you lighting and 10X magnification for \$25 to \$30.

More expensive and with considerably greater magnification are the pocket microscopes. Some are illuminated while others have clear plastic or an open area just above the object being viewed to let you use either natural or supplemental light. The price range in this group is great. One of the cheapest is the 30X illuminated pocket unit sold by Radio Shack for about \$10.00. It comes with a vinyl case and uses AA batteries. Up the scale are the Panasonic Light Scope and similar models that retail for \$25.00 to \$50.00 and provide light as you unfold the parallel tubes of the body. They have magnifications of 30X to 100X. Other models of pocket microscopes include a 50X model from Edmund Scientific for \$129 and the Macroscope 25X from RF Inter-Science Company for \$150.

If you want also to use some form of magnification while looking over the bees on a comb there are many options. Orvis makes a 3X binocular magnifier that clips to the nose-piece of a pair of glasses (about \$16). Edmund Scientific has a miniature monocular, 2.5X to 2.75X magnification, that adapts to eyeglass frames for \$20 to \$50, depending on the model.

Using hand magnifiers with greater than 5X power takes some practice. Your hand needs some support to hold the unit steady while you peer through it. It is probably best to buy one of the magnifiers with not more than 10 or 12X power. My 12X hand lens gives me a good picture of both *Varroa* and *Braula*. The pocket microscopes have the advantage of being held against a table, car fender, or lab bench so that they are steady while you are examining a small critter. They focus

*Continued on Next Page*



JAYCOX... Cont. from Page 10

eadily on an object placed beneath the lens on the supporting surface.

Obviously, you can collect whatever specimens you find in a bee hive and send them in 70% alcohol to your state bee inspector or the state entomologist without looking closely at them yourself. But with some way of examining them more closely you can make an initial identification for your own satisfaction before sending them off.

Searching for mites on adult bees may be easiest, depending on your eyesight, with a pair of magnifying reading glasses. These are available in most states in drugstores for as little as \$7.00 on sale. Otherwise, you can wear a magnifier that fits your head like an eyeshade and is handy also for grafting queens or tying fishing flies.

## Chemical Repellents

When I lecture about removing honey by the use of chemical repellents, I always point out the odors involved. Benzaldehyde, or oil of bitter almonds, has a rather pleasant, sharp odor that is no problem. But then there is butyric anhydride, sold under the trade name Bee Go. The compound is found in human perspiration and in rancid butter and smells a little like both. It doesn't pose a threat of contamination of the honey, but may repel honey customers who associate it with your product. A friend in Illinois used to carry it in his old Chevy that he drove to work. When you passed the car there was always that unpleasant smell seeping out of it. He spilled in on his shoes one day and couldn't wear them for a long time.

Clive de Bruyn, writing in *The Essex Beekeeper*, says he likes how efficiently he can remove honey with Bee Go at the heather and the oil seed rape in England. That is, if you can stand the stink. He keeps the container of Bee Go inside two sealed plastic bags within a sealed plastic tub which is surrounded by another bag and a 28-pound sealed honey tin. Yet his storage shed "smells of something nasty" and, on hot days, the car absorbs the smell and makes your eyes water. "Not surprising that it repels bees."

While on the subject of chemical repellents, I should ask if you have ever had any physical reaction from contact with benzaldehyde. A friend tells me that she has used it only

twice, but each time she felt an odd numbness on both sides of her lower jaw. It is an unusual feeling she has never experienced before. If you have had such an experience with benzaldehyde or any reactions to Bee Go, I would appreciate hearing from you.

## How Many Honey Bee Species?

For many years, we have believed that there are four species of honey bees from around the world. These are *Apis mellifera*, the European bee, *Apis cerana*, the Asian honey bee, *Apis dorsata*, the giant or rock bee, and *Apis florea*, the dwarf honey bee. There has not always been such agreement about the bees. In 1865, Frederick Smith recognized 20 different species while some other authors considered there were only four valid species. The problem of proper identification of species, even for competent taxonomists, was made difficult because of poor original descriptions of the species published in a multitude of journals. It was also difficult if not impossible to view the type-specimens on which the descriptions of species were based.

In 1953, Maa Tsing-Chai published a 115-page "inquiry" into the relationships of the honey bees. He recognized 28 species, most of which we have long considered to be synonyms, duplicate names, for the four species we recognize. For example, Maa considered that *Apis mellifera adansonii*, an African race, was a distinct species. Among other species he recognized were *Apis laboriosa* and *Apis andreniformis*. The former he considered a subalpine species from Yunnan Province in China, and the latter was from the low hills of Borneo and appeared closely related to *Apis florea*, which lives in the lowlands.

There is now convincing evidence that there are at least six distinct species of honey bee, including *A. laboriosa* and *A. andreniformis*. A group of researchers from the People's Republic of China reported in the *Journal of Apicultural Research*, 1986, their study of the bees using biochemical techniques known as molecular systematics. The six species of bees were all collected in Yunnan Province of China where it took a month to find nests of the two rare and newly recognized species.

In 1896, plans were being considered to bring *Apis dorsata* to

the United States. This is the large and aggressive bee that makes a single comb suspended from tree branches, rocks, and the overhangs of buildings in countries from the Philippines to Pakistan. In 1935, an Australian, Tarlton Rayment, reported that the bee was brought to America but did not become established.

The fascination with introducing exotic honey bees is continuing, with interest in *Apis cerana*, the Asian bee. This species suffers less from parasitization by the *Varroa* mite because it has evolved the ability to catch and injure or kill adult mites. Also, the mite breeds only on developing drones, not on the developing workers as it does with *A. mellifera*. *A. cerana* seems to have other attributes including possible resistance to *Nosema* disease and the ability to forage at cool temperatures, according to a report by Eva Crane in 1971. She was discussing the studies by Prof. Friedrich Ruttner on colonies imported into Germany. It was Ruttner's importations that brought *Varroa* mites into that country.

There are many reasons why it would be a mistake to introduce *A. cerana* into the United States, particularly the fact that it is unable to compete with European bees. In countries with both *cerana* and the introduced *mellifera*, the smaller bee has been pushed out of much of its original range. Although it would be valuable to have stock able to kill adult *Varroa* mites and reduce their breeding, we can gain similar benefits with bees that go through their life cycle more rapidly than present European strains of honey bees now present in the United States. This can be achieved when the Africanized bees become established or by selective breeding for shorter development in European honey bees.

The existence of two "new" species of honey bees has no real importance for beekeepers in the United States, but it is an important landmark in taxonomy when the confusion can be clarified by new biochemical studies more than 125 years after the original descriptions were published. It will be many years, however, before textbook references to the honey bee species are brought up to date.

## Killing Swarms

In September, I wrote about a technique used in Panama to kill

*Continued on Page 13*





# RESEARCH REVIEW

By DR. ROGER A. MORSE • Cornell University • Ithaca, NY 14853

*"Though not yet registered for use even in Europe, let alone the U.S., Fluvalinate is the Varroa treatment of choice by European researchers — for the moment."*

## What is Fluvalinate?

**T**he favorite chemical on the part of European researchers for the control of the mite *Varroa jacobsoni* in beehives is fluvalinate. However, I hasten to point out that this is a result of tests conducted in several laboratories only this past summer. The material is not yet registered for use in Europe. Fluvalinate is a synthetic pyrethroid. In the U.S. it is sold under the trade name Mavrik and the Zoecon-Sandoz label. It is registered for use to kill a wide range of insects and mites.

Pyrethrum is a natural, plant-produced insecticide. While we give it a singular name it is composed of several isomers and is often referred to as pyrethrins. It is extracted from a daisy-like flower in the genus *Chrysanthemum*. There are several species in the group that show insecticidal activity. Pyrethrum extract is still marketed today; most of the flowers are harvested from east Africa, especially Kenya and Tanzania where it is important in both countries' economics.

The insecticidal properties of pyrethrum were known as early as 1840 in Europe. It is possible it was used as an insecticide even earlier in Persia. The chemistry of the material was studied early in this century; however, since there are many components it was only in 1947 that they were all fully characterized. The first synthetic pyrethroids were made in the 1940's and 1950's, but these were unstable compounds. They were easily degraded by sunlight but this problem was soon overcome.

Over a hundred pyrethroids have been developed in the past few years. Several of these have been registered and are being marketed as

insecticides and miticides today. In fact, pyrethroids have become the second most widely used class of pesticide. In addition to fluvalinate, I understand another, similar material is being tested for *Varroa* control in Europe.

There are several advantages in using fluvalinate for control of *Varroa*. Like pyrethrum extract, most of the pyrethroids generally have a low toxicity to mammals. They pose no serious problem as regards to toxicity to honey bees if used at the right level. Atkins et al (1981) places fluvalinate in Category III that includes materials that are relatively nontoxic to honey bees. However, it is highly toxic to fish.

In general the pyrethroids do not accumulate in the environment. Using fluvalinate in a beehive is much like placing a flea collar on a dog or cat. Bees degrade or break down fluvalinate but not before it has done its work. Sunlight will break down the material slowly. In honey we expect it will fall apart because of the honey's low pH. We are concerned that it might be picked up and retained in its original state in beeswax.

At present the method of using fluvalinate is to impregnate it into plastic strips that are in turn placed inside colonies in the brood nest. If the plastic strips are placed on the tops of the frames, or on the bottomboard, they are not so effective. The bees pick up the material on their feet, and their body hair, as they walk across it. The fluvalinate is, in turn, transferred physically to the mites, which are then killed.

A major problem in the control of *Varroa* is that the mites hide under and are protected by the brood cappings while they are developing and feeding on the honey bee pupae. There are several chemicals we may use to kill *Varroa* mites on adult

honey bees but nothing has been found that will penetrate the cell cappings. Fluvalinate in plastic strips can be left in a colony for one or two months and will kill mites as they emerge from cells. I am told that when used in the proper quantity, and placed in the right location in a beehive, almost all of the mites — at least 95% and probably more — will be killed.

In treating colonies of honey bees for *Varroa* mites one never treats just one colony in an apiary but rather the whole apiary. In fact, treating all of the colonies in a large area is preferred. Researchers in Western Europe believe that *Varroa* can be controlled with one properly applied chemical treatment per year. In fact, if it were possible to treat all of the colonies in a large area, say 100 square miles, it might be possible to make a treatment every other year. Perhaps in Southern Europe and the Mediterranean, more treatments are needed, primarily because there is no break in the bees' brood cycle.

For those who may care to pursue this question further, the following are some of the standard references on the chemicals similar to natural pyrethrins and man-made pyrethroids.

Atkins, E.L., D. Kellum and K. W. Atkins. **Reducing pesticide hazards to honey bees.** University of California Leaflet 2883. 1981.

Casida, J.E. **Pyrethrum, the Natural Insecticide.** Academic Press, New York. 329 pages. 1973.

Elliott, M., Editor. **Synthetic Pyrethroids.** ACS Symposium Series 42. American Chemical Society, Washington, DC. 229 pages, 1977.

Miller, T. A. and M. E. Adams. **Mode of Action of Pyrethroids in Insecticide Mode of Action.** Academic Press, New York. page 3-23 1982. §



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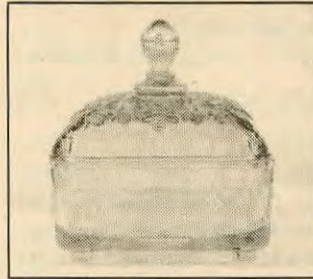
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JAYCOX... Cont. from Page 11.

swarms of Africanized Bees. They use a strong mixture of detergent and water, which is sprayed onto a clustered swarm, disabling and killing the bees very quickly.

Later that month I received a nice letter detailing an attempt to kill bees with a detergent mixture after a tree was felled with a colony in it. The bees were not bothered by the attempt to kill them as they flew and milled around the fallen tree. The beekeeper who tried to kill the bees was uncertain about why the method did not work, and considered that perhaps very hot water was needed.

In the original note, I mentioned that such a treatment would not be effective on established colonies or those in a cavity. What I failed to say was that I was talking only about a true swarm. Many beekeepers call any colony a "swarm" and do not differentiate between the two. The demonstration I observed in Panama was made on a real swarm, a couple of pounds of bees with a queen hanging quietly in the upper corner of a window frame on a building.

Cool water is probably more effective than warm water because it will become even cooler when sprayed, thus cooling as well as wetting the bees. There may be great differences also between detergents. The beekeeper used one-half cup of Tide in a gallon of water, which should have been suitable. Active, flying bees obviously resist such treatment, and the spray does not wet the bees well within a cavity.

If you try this method, keep these ideas in mind and please let me know whether you are successful in killing the bees rapidly and without problems. I expect to test the technique next spring, but only in cases where hanging swarms represent a hazard to people nearby. \$

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# QUESTIONS?

**Q.** Would entrance guards work for swarm prevention in comb honey production?

John E. Palmer  
Newmarket, NH

**A.** By entrance guards I assume you mean grids of queen excluder which fit over the entrance to confine the queen. No. These devices, in addition to confining the queen, also imprison all the drones and tend to demoralize the colony. It is the wrong approach to swarm prevention.

**Q.** Instructions for "Padgening" always say that if a colony throws a prime swarm, you should move that colony off to one side and hive the swarm at the stand where that parent colony stood. But what if you find such a swarm and you do not know which hive it came from? Can you not then just move some other strong colony off to one side and hive the swarm at that stand?

Rich Fleming  
West Chester, PA

**A.** This question is sure to arise in the mind of any beekeeper familiar with padgening who finds a swarm in his apiary and does not know which hive it came from. I have done this several times, and while it works all right, it has seemed to me that I did not get the same good results as when I have moved the swarmed hive. I do not know why.

**Q.** Some experts recommend using eight plastic frames in the super for producing round comb honey sections while others recommend nine. Which do you recommend?

J. Janutka

**A.** I use eight, giving me thirty-two sections per super. This requires having a strip of plywood on each side of the super, but the advantage is a well-ventilated super, with space on both sides as well as the ends.

**Q.** Do bees carry both pollen and nectar on the same flight?

Clarence Hineman  
Bristolville, OH

**A.** See THE ILLUSTRATED ENCYCLOPEDIA OF BEEKEEPING, ed. by Roger Morse and Ted Hooper, p. 141: "Some bees collect pollen only . . . other bees may collect nectar only; but from most flowers, bees collect both nectar and pollen . . . foragers collecting only pollen take sufficient honey from the hive to provide them with fuel during the trip."

**Q.** I have heard that even though no previous symptoms were present one can develop an allergy to stings over a period of time, even years. Is this true? I thought that one develops an immunity instead.

Gary L. Ball  
Lewiston, ID

**A.** Usually a beekeeper develops an immunity over time, but there have been cases in which the opposite has occurred and long-delayed sensitivity has developed instead.

**Q.** I have four colonies and do not want any more. How can I stay at that number and prevent swarming?

Jim Burgess  
Tenafly, NJ

**A.** If you produce extracted honey you can minimize swarming by requeening every spring, reversing brood chambers and supering early

without an excluder. For more rigorous control, devise a system of keeping three or four empty combs in the center of the brood chamber at all times until about mid-July, by exchanging combs of brood with empty combs. This would require using all full-depth supers.

**Q.** I have six hives producing both extracted and cut comb honey. Why is the yield of cut comb honey always less than the extracted? I had already harvested extracted honey this year before the bees had even drawn out the unwired foundation in my cut comb supers.

Robert Lacy  
Shade Gap, PA

**A.** Bees always store honey in drawn combs, if they have them, before drawing out new combs. Thus the colonies you use for cut comb honey bring in just as much nectar as the others, but they do not start storing in the supers until they run out of storage space below. This is why comb honey beekeepers use small hives.

**Q.** Is there any advantage of nucs over package bees?

Will Clayt  
Benedict, NE

**A.** Definitely yes. A colony begun with a nuc begins to increase in population at once, whereas one begun with a package dwindles for at least three weeks before any new bees are added to its population. A nuc consisting of not fewer than three combs of mostly sealed brood and bees will store a normal or near-normal crop of honey the first year.

Questions are welcomed. Address them to Dr. Richard Taylor, R.D. 3, Trumansburg, NY 14886 and enclose a self-addressed, stamped envelope for prompt response. §

# & ANSWERS!

by Richard Taylor





# HONEY BEE GENETICS

By STEVE TABER of Honey Bee Genetics • P. O. Box 1672 • Vacaville, CA 95688

*"This is the first of a three part series on honey bee genetics and bee breeding."*

**A**t a recently concluded class held here in the technique of artificial insemination, many participants did not understand or remember the genetics they probably had taken in high school or college. And anyway, genetics of bees is slightly different than that of other plants or animals. What I am going to try to do in this 3-part series of articles is to present information on genetics as simply and as quickly as possible, avoiding the use of most genetic terminology.

Unfortunately, most of the things that beekeepers are interested in breeding for have not been studied intently by people who study genetics; but that doesn't mean we can't breed for or against certain traits or characters. And, you must remember that environmental factors can often be as important or more important than genetic factors. As an example, a recent study of the inheritance of defensive behavior (called Heritability, or  $h^2$ ) of bees showed that mild-mannered bees were quite defensive during rainy, cold weather. (Moritz 1987).

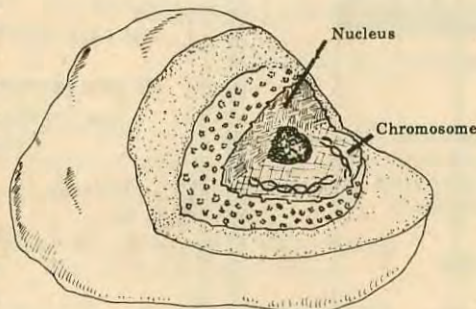
Nearly all living things grow and reproduce in a similar manner, with minor but important differences. With the honey bee, the minor but important difference is the drone, who comes from an unfertilized egg. Everything else about bees is similar to that of cows or people; they are made up of microscopic cells containing mostly fluid, much like sea water, and a nucleus. The nucleus contains mostly the chromosomes — specific for every species of plant or animal. They are specific not only to number but also shape. Usually, their shape appears as a long string. Chromosomes contain the genes, which in turn are composed of a special protein called DNA. It is DNA that contains genetic characteristics

of the bee we are interested in.

Genes are certainly interesting, and command much attention from anyone concerned in honey bee genetics. For instance there are certain genes in humans that control the color of our eyes, skin and hair. More genes have been studied in humans than any other plant or animal. Of particular interest are those genes responsible for our health or sickness.

Many genes have also been studied in the fruit fly and in corn. Few genes have been studied in honey bees however, probably fewer than fifty, and almost all of them are of only academic interest because they have little to do with what beekeepers are interested in — honey production, wintering and queen rearing.

Certain genes can be modified by other genes, and in some cases a characteristic does not show up when it should because it is hidden, or 'masked' by another gene. Genes are spots, or places, on a chromosome. They direct or give signals to the organism on how to behave, what color they will be, what will be their temper and how vigorously they will collect nectar and make honey. Genes on chromosomes are what makes life what it is.



There are two specifically different types of cells in all individuals,

one that is associated with reproductive, or sexual, tissues, and all others. These are called somatic cells that build the rest of the body. By the time a bee egg hatches, you can already see that some of these somatic cells are making the skin of the larva, the gut, and the rest, excluding the reproductive tissues. Staining and high magnification will show that the reproductive cells are already in place in the ovaries of a fertilized larva and the testes of a drone.

Honey bees have 16 pairs of chromosomes for a total of 32 chromosomes. When the bee is growing very rapidly, as a fertilized egg or later as a larva, the pairs of chromosomes split and go to opposite ends of the cell. There are then 16 at each end of the cell, each being 1/2 of the original pair. These chromosomes, when split, are not identical. The cell then builds a wall between the two sets of 16 pairs.

Once the wall is built, each chromosome produces an identical duplicate of itself. When this is finished, there are once again 16 pairs of chromosomes in each new cell. The process continues rapidly until the bee is fully grown. This whole process, briefly described, is called "mitosis" and is in reality much more complicated than described. Queens and workers do this, as do most all other plants and animals, but drones don't. They are a bit more complicated.

The drone comes from an unfertilized egg and only contains 16 unpaired chromosomes. The chromosome splits and divides similar to the process described above, but actually it is not similar at all. Since drones have no father, all 16 chromosomes, when split, pass identical genes to each end of the dividing cell.

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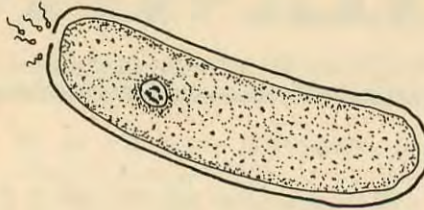


**TABER... Cont. from Page 15.**

Therefore, when the drone produces sperm, each of the 10 million or so sperm cells are *exactly the same*. We consider the drone a flying gamete and only a very few other insects produce sperm this way. And, as far as we know, both the drone's reproductive and somatic cells are exactly the same.

Back to the queen: As a virgin she goes on a mating flight and receives many sperm cells. Each sperm cell contains 16 unpaired chromosomes. The queen has 16 pairs of chromosomes and begins to produce eggs. But now there is a different type of cell division in the reproductive organs of the queen. It's called "meiosis." In essence, in meiosis the chromosomes separate, move to opposite ends of the newly forming cells — and do not duplicate themselves. Therefore, each reproductive cell has only 16 unpaired chromosomes. The heart of the bee egg is located at the top of what we normally call the bee egg. You know how a fertilized hen egg is, that spot next to the yellow yolk? Okay, the true bee egg is a microscopic spot

near the top of the white shell, which is mostly filled with yolk.



As the real egg moves down the oviduct, the yolk and shell (chorion) are added and the egg meets what is called the common oviduct, which is connected to a tube leading to the sperm storage organ, the spermatheca. A few sperm are deposited at the top of the egg next to a small hole, called a micropile, and then the egg is laid, or oviposited. Several of the sperm enter the egg opening and swim through the yolk to find the real egg. The 16 unpaired chromosomes from the egg and the 16 unpaired chromosomes from the sperm meet and match up to their counterparts — and there are 16 pairs again. The genes from drone

chromosomes will be different in many respects than those from the queen. This is what causes genetic variability in the offspring.

Because the drone has only one set of chromosomes, we call him 'haploid' (meaning 'half'), while the queen and worker have 2 sets and are called 'diploid' (or 'two'). On rare occasions a drone can be raised from a fertilized egg, but it is unlikely to ever occur in nature. We do know that unfertilized eggs hatch and turn into females, or worker bees. Several scientists have tried to measure this and found that from 1 in 1,000 to 1 in 5,000 unfertilized eggs would develop as an unfertilized parthenogenic worker. I have found 3 or 4 of these strange creatures in my work.

With paired chromosomes, if the matched genes on a particular spot on the chromosome are the same, they are called "homozygous" (meaning same). If, on the otherhand, they are different, they are "heterozygous" (or mixed). For instance, the beautiful cordovan bee has to be homozygous for cordovan color. That is, the gene on both sets of chromosomes must be

*Continued on Next Page*

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cordovan'. If she has one normal color gene, or wild type gene, and one cordovan colored gene, the emerged bee will look normal in body coloration. The normal gene *represses* the cordovan color showing in the adult, so the cordovan gene is called *recessive*, while the normal, or wild type gene is called *dominant*.

Some beekeepers occasionally see drones that have strange eye colors. Many of these eye colors, white, red, olive and others have been described and nearly all are recessive.

Many factors about bees have a number of genes governing their behavior. Rothenbuhler discovered that disease resistance is regulated by two genes, one that causes bees to uncapp dead brood and the other to remove the dead brood — and both are recessive. This means the genes for uncapping and removal have to be on both chromosomes (homo-

zygous) for the bees to show resistance to AFB.

### Which Sex?

It was once thought that a bee's sex came about because fertilization made a female, and unfertilization, or parthenogenesis, the drone. Dr. O. Mackensen presented a whole new concept based on one gene, a sex gene. If the genes at the sex determining spot were different, or heterozygous, when the egg was fertilized, then a female would result. On the other hand, if the fertilized egg had, at this spot, genes that were the same (homozygous), the egg died or was eaten by the bees. Or the other condition — if there was only one gene at that spot, then the unfertilized egg produced a drone. (Mackensen 1951).

When there are a whole series of

genetic differences in one gene, they are called an *allelic series*. And, at the spot governing sex of the honey bee, there have been counted from 12 to 18 sex alleles. These are referred to as lethal alleles, because when they are given to an egg, the egg is destroyed.

Mackensen discovered this by artificially mating, for several generations, virgin queens to their brothers. He then measured the egg hatch carefully and made crosses between these inbred individuals. This was done about 45 years ago, and is the most important genetic attribute discovered about our bees. It tells us what happens when we inbreed bees, namely, that fewer eggs hatch.

In practice, when you are raising queens that mate naturally, we know from many experiments that she mates with from 10 to 17 drones. The mating usually takes place within a mile or two of the apiary, but it can be much further. If there are as many as 15 different sex genes (sex alleles or lethal alleles) in the area where she is mating, we know that nearly always at least one, and sometimes two of the drones she mates with will have a sex allele similar to the queens. When she mates with a drone with a similar sex allele, half of the eggs fertilized by that drone's sperm will not hatch. So, in the actual business of raising queens and mating them naturally, you will rarely ever have a queen with an egg hatch over 95%.

Egg hatch percent or percent viable eggs can be measured quickly and easily by taking a 3" x 5" card and cutting a hole in the center, exposing exactly 100 cells. The card is moved around over combs with unsealed brood until you select the very best, most uniform age larvae you can find. Then count the cells remaining that are empty, or have different age larvae in them. §

Next month we continue this series, examining breeding programs, hybridization and testing for specific traits.

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# MAKING THE MAGAZINE

By BUZZ PHILLIPS

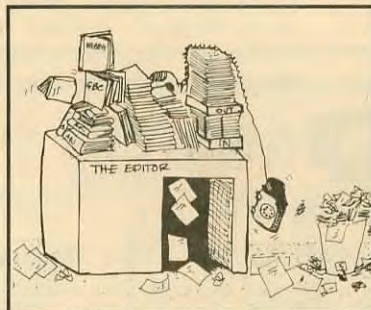
Being low man on the totem pole sometimes has its advantages, and sometimes not — but this is one of the good times. My boss told me the other day to put together a short story on how we make the magazine here, so

our readers have an idea of what really goes on.

So now you'll know who's *really* responsible for your copy each month — no matter whose picture gets in the magazine!

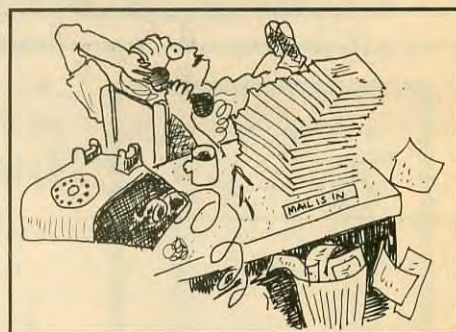


This is me, doing what I do best — searching the files for lost subscribers, and for new people to tap. It's a dirty job, but somebody has to do it. Since I don't work here full time (Ha!), I get to spend time keeping my bees. That's what I really like to do, but my other half says I need a regular income. So, I don't get to poke my nose in my colonies nearly as much as I'd like to, but almost enough.



Now this is our Editor, as he thinks everybody sees him. Busy, Busy, Busy. But below is how we see him. Notice: nearly clean desk, a fresh cup of coffee, feet up and that glazed look in his eyes. The secret's out fella, back to work!

Actually, he doesn't do a bad job, but I'm still not sure just exactly what it is he does. He's on the phone a lot, he reads a lot, he throws away an incredible amount of paper (he really is a messy person), and he does some other things, like travel, that nobody here really keeps track of. I guess he's O.K., but I'm not really sure why.



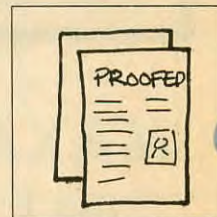
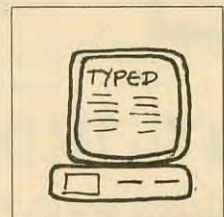
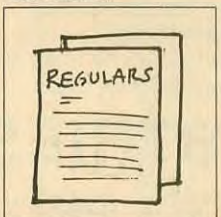
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Stories and articles are selected and edited.

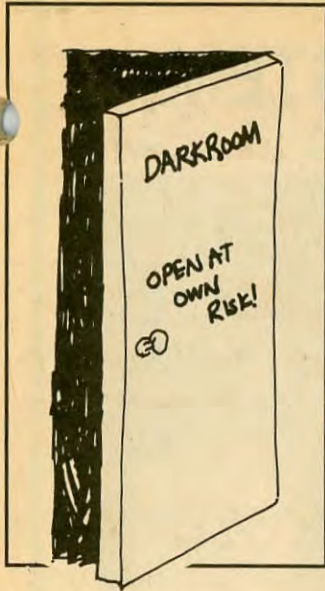
Regular columns and features are assembled.

All are typed for first proof.

First proof checks for length and fit.







This is Sue Steppenbacker's hideout. She spends quite a bit of time in there, developing photos, making stats (or P. M. T.'s as they're called in the trade), stripping negatives, making plates, doing all the things that a magazine's photo person does, except for our covers. She can make even poor photos look good most of the time, but not always.



The Editor is almost constantly asking her to do the impossible, and of course he wants it done yesterday. So, she ends up spending quite a bit of time with her nose in a book trying to figure out how to do just what he wants done. I'm glad I don't have her job.



This is Becky. She's the person who receives all of our mail, opens it and makes sure the right person gets the right mail — not as easy as it sounds. Once she gets her mail, which consists of all the new or renewal subscriptions, she enters them on her computer. She has to make sure she knows where they came from so the Editor can see how effective I'm doing *My* job. He gets his nose in everybody's business.

Becky also takes care of the mailing lists. When the magazine gets sent out, or I have to send out a renewal notice, she is the one in control. Without Becky, none of you would ever hear from any of us.

*Continued on Page 21*

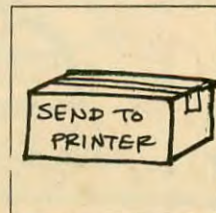
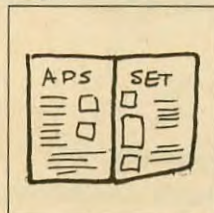
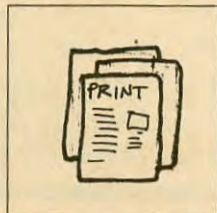
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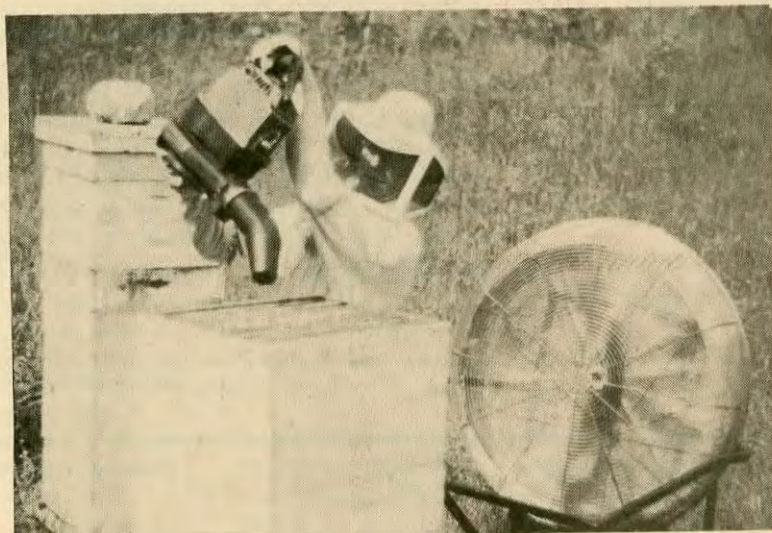


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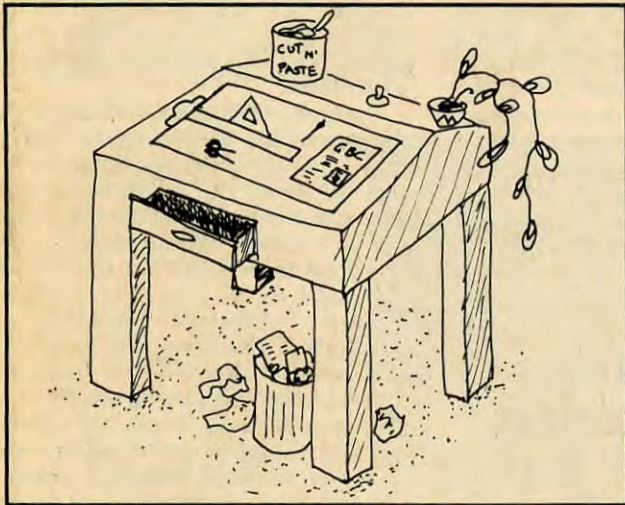
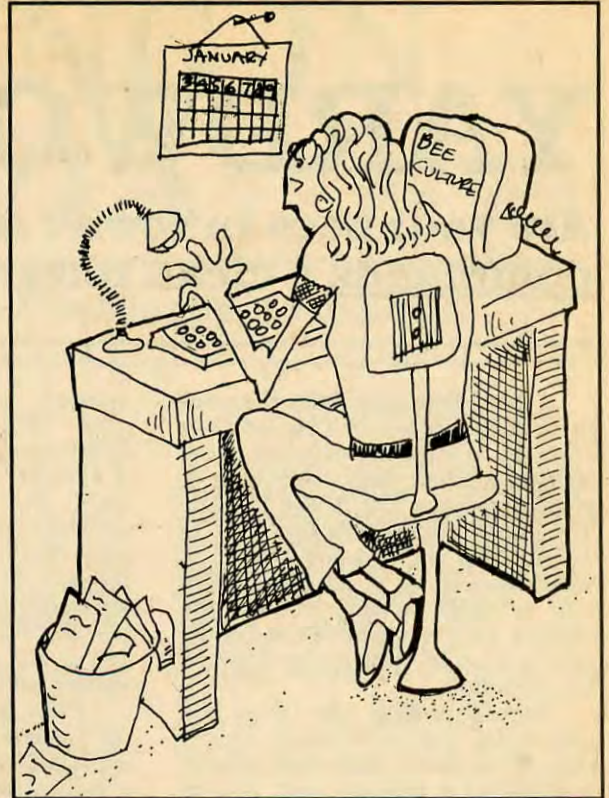
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This is the heart of it all, the command center for *Bee Culture*. This is Cyndi's office/work area/art studio. Cyndi is our Production Manager, but that doesn't do her justice. This is what Cyndi does, really:

- Once the Editor gets done doing whatever it is he does with an original story, it goes to Cyndi who enters it in the computer.
- It gets proofed and rewritten, if needed, (Cyndi doesn't make many mistakes, but often a story has to be shortened or changed because the Editor didn't do it right in the first place).
- When that's done, Cyndi "sets" the story. That is, she puts it on the final page you see in your issue.
- She also sizes the photos, leaves space for all the ads we have to fit in, and makes it look good.
- When that's done, she drops in the photos, ads and other things that get reused every month, like the Honey Report map. See, I told you she did a lot.



When all this is done, it gets checked once more, packaged up and sent to the printer. He then takes the Editor's stories, Sue's photos, Cyndi's typesetting and Becky's labels, puts them all together and in about seven days sends you your very own issue.

Like I said, this is one of the times when being on the bottom of the ladder was good. Now, if the Editor doesn't change all this, you'll know who is *really* responsible for your copy, no matter who's picture gets in the magazine every month!§



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# YARDWORK

**Are your bees in town? A clean yard commands a clean image.**

By **KEN OLSON**  
87417 Halderson Road  
Eugene, OR 97402

I would've sunk into the very earth and disappeared if I could have. I wanted to auger myself clear out of sight and either deny everything or plead ignorance. But it was too late. The fifteen visitors who had come to see my bees and a demonstration of what beekeeping is all about were now carefully dancing through the thistles. I felt embarrassed and reluctant to proceed, because my beeyard looked awful.

Several seasons have come and gone since that unfortunate experience. Since then I have methodically maintained a beeyard that reflects self-respect and a commitment to care and attention. How did I do it? What changes did I need to make? How do I keep it looking attractive?

The most apparent change I made was to line up the hives in a straight line. My twenty hives are in two rows of ten each. I brought forward those which were back too far, and nudged back those which were too far forward. I used a long steel bar as a pry, and gently slid the hive and pallet the few inches necessary to make the alignment. At each purchase I walked to the head of the line to make a sighting. I was determined that none of the hives would vary.

Next, I separated each hive from its neighbor by exactly the same distance. To get accurate spacing, I cut a board 18 inches long and used it as a guide. If the board wouldn't fit between the hives, I moved them far enough apart to accommodate the guide. If it fit too loosely, I moved the hives closer together. The end result was that they appear to have been placed deliberately, using some method. Since the hives were now in alignment my beeyard took on an attitude of precision.

With the physical positioning finished, I next turned my attention to their appearance. Some hives were painted light green, some light brown, and a few were painted white. I hesitated at a painting project that

involved every hive. Some didn't need fresh paint, but I was determined. So I bought two gallons of exterior white paint and went to work. Now they stand as if in uniform, with every hive the same color. The bees don't seem to object; they still fly after nectar and pollen as vigorously as before, as far as I can tell. But I like the hives better now, and I don't feel like hiding when visitors come to see them.

I also decided to cut the grass in the beeyard regularly. In the past I didn't cut it for three or four weeks at a time, and in that time grass and weeds had grown to heaven reaching heights. When my guests arrived that eventful day one man suggested I get goats to keep the grass down. I decided my lawnmower was going into action in the beeyard. Now I

mow it whenever I mow my front lawn. I also water the grass around the hives to keep it green and fresh.

This lush, green grass helps cool the hives in hot weather, and makes the yard look colorful and attractive. And now I frequently start up the lawnmower and mow the beeyard even if my front lawn doesn't need cutting. The difference is, the bees can now fly in and out, land on their porches without their wings banging against the tall dandelion stems, thistle thorns, or leaves from other weeds. They zip in and out and never miss a beat.

Another eyesore I noticed when my guests appeared were the boards and papers and cans and bottles in my beeyard. They were scattered and strewn about like the litter and clutter around a fast food joint. I saw them there for months, but they didn't shout at me for attention, and I became accustomed to them. I had always intended to remove them, but I sort of dismissed it all once I couldn't see them under the grass and weeds. Out of sight, out of mind. But when the visitors came, I couldn't gather up all the junk and debris before they noticed. I was tempted to frantically scurry about red faced and pick up everything in sight. But it was no use — I swallowed my pride.

I'm not through remodeling the appearance of the apiary. I still plan on building a picket fence around the perimeter of the yard. I don't know why I choose a picket fence; a wire-net fence would work as well. So would a hedge of laurel or boxwood. But for me, beehives and picket fences belong together. But a hedge isn't a bad idea either, and I may still work on that.

My beeyard isn't a place of beauty. Not yet. But I'm working on it, and when visitors drop by now for a demonstration, I'm happy to show them around. The days of feeling embarrassed for having neglected or totally abandoned hives are forever gone. §

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**“My visitors  
were dancing  
through the  
thistles and  
debris — but it  
was too late.”**

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# BEEKEEPING IN YUGOSLAVIA

By RON MIKSHA  
Box 22 • Val Marie  
SK SON 2TO

Yugoslavia is an Excellent country for a beekeeper to explore.

## INTRODUCTION

During the past few decades, it has been the vogue to export North American technology and business habits to all remote corners of the earth. Very little concern has been given to the possibility of actually learning from people in other cultures. Generally, we feel our methods and knowledge are superior, and we place ourselves in the role of the educator, rather than the student. This article explores beekeeping in Yugoslavia, a country generally neglected when apiculture is considered; but, as you will discover, a nation rich in heritage and capable of offering some rather interesting alternatives to many of our own beekeeping practices and problems.

Yugoslavia is a mountainous country, about the size of PA and NY combined. It is situated in southeast Europe and has Italy, Greece, Austria, Hungary, Albania, Bulgaria, and Romania as neighbors. These seven adjacent countries represent a very great cultural and linguistic range.

The Adriatic tidal coast line of Yugoslavia stretches about 1000 miles. The sunny and mild coastal strip is never extremely hot nor cold and many of the resort villages feature January average temperatures of 50-60°. Inland from the narrow coastal strip are a series of mountain ranges with a dry, stony plateau being the dominant geographical feature. This is the Karst region and it is rather thinly populated. The best farmland in Yugoslavia and the densest population is found inland farthest from the sea — in the fertile river valleys of the Danube and its tributaries. This humid region has hot, moist summers and cold, snowy winters.

About a third of the country is heavily forested and for many years fine furniture and finished wood products made from oak, fir, and beech have been principal exports. Along the Adriatic coast, olives and grapes are common, while in the great interior valley wheat, oats, corn tobacco, sugar beets, and potatoes are important.

There are about 750,000 colonies of bees in Yugoslavia. The greatest density (4/sq. kilometer) are in the river valleys, but colonies are found in all parts of the country, including

## TYPES OF BEEHIVES

In North America, we tend to favor standardization — everything (and often everyone) is expected to be interchangeable with the next piece of equipment. Indeed, this is the only way for one person to efficiently operate a thousand colony honey operation. In Yugoslavia, the only thousand colony bee operation is owned by a cooperative farm. Apiaries are very small, the majority having only 5 to 10 hives. There are only about a dozen "professional"

beekeepers — individuals with over 100 hives each<sup>3</sup>. The small individual holdings, the two thousand year history of beekeeping, and the great cultural diversity of the country have all contributed to the development of a wide assortment of styles of hives, each adopted by various people to fill specific individual needs.

## SKEP BEEKEEPING

About 40% of the colonies in Yugoslavia are kept in "primitive" hives, i.e., hives which have no moveable frames<sup>4</sup>. The first of these to be considered is the very familiar straw skep. Skep beekeeping is most widely practiced in the central and southern mountains, but skeps can be found in all parts of Yugoslavia<sup>5</sup>. The dome-shaped skep, locally known by the name Vrshkare (pronounced vrshkarr-eh), is often made of straw, vines, or soft willow twigs. It is usually owned by the small farmer who keeps the skeps lined up against the wall in front of his house.

Skeps that are in good repair



the dry mountainous plateau and rugged coast. The over-all density of bees is about 3/sq. kilometer, or nearly 8/sq. mile<sup>1</sup>. If the continental U.S. had a similar density of bees there would be 25,000,000 colonies, rather than the present 3 or 4 million. This should hearten the North American beekeeper worried about overstocking of locations<sup>2</sup>.

Continued on Next Page





Andrew Miksha studies Yugoslav skeps.

### YUGOSLAVIA... Cont. from Page 23

have a handle on the top (see photo, skep on far left). In the fall, the beekeeper-farmer lifts all his skeps by that handle. Those which are too light will not survive the winter and they are killed. Those which are very heavy have honey to offer and they are also killed and the honey is harvested. The ones of medium weight are left for winter.

In the process of checking weights, aggressive hives are also discovered and destroyed. In the spring, the cleaned-out skeps are restocked by catching swarms. During the thousand or more years in which this system has been used in Yugoslavia, the native Carniolan race was probably inadvertently genetically manipulated, becoming more docile and somewhat predisposed towards swarming; at the same time they were forced to develop into colonies which could winter on the stores available in a skep—which seldom holds more than 22 lbs. of honey. The skep system of beekeeping yields an average of only about 2 to 4 kg of honey per colony (counting those not killed off each year)<sup>6</sup>. By North American standards (50 kg average) this yield is pitiful, but the small farmer with 10 skeps in Yugoslavia gets 25 to 50 pounds of honey per year for his family, has plenty of pollination for his crops, and his cost, labor, and time invested per pound of honey is probably less than a North American beekeeper would experience.

### BOX BEEKEEPING

In the republics of Yugoslavia nearest to the Greek and Albanian borders, many beekeepers build rectangular boxes from boards to hold their bees. These also have fixed combs, but are easier to handle when the bees are killed off and the honey is removed. Also in this same area, some swarms are kept in hollow logs — much like the "bee gums" once common in the southern part of the U. S.

Finally, the most unusual and most beautiful of the fixed-comb hives is found in the Yugoslav Alps. These traditional Slovene hives are often clustered in a matrix pattern several colonies wide, stacked four or five high. The fronts have intricate works of art painted onto them: fanciful arrays of color, pastoral scenes, or Biblical portraits. The different colors and patterns help the bees identify their individual nests, a task which they would normally find confusing when so many colonies are

clustered so closely together. Honey is removed by opening individual doors in the back of the hives while smoking the bees forward and away from the honey. Honey is scooped out by specially crafted "Pchelarske Noveve" (beekeepers knives) and the bees are generally not killed in the fall with this system of beekeeping<sup>7</sup>.

### MODERN HIVES

The process of converting to modern hives (those with movable frames) began over a hundred years ago, but the greatest number were modernized shortly after World War II. Many thousands of colonies were destroyed during the war.

Afterwards, beekeepers converted to newer-styled equipment. The Washington-based UNRRA shipped 41,500 new beehives and 800,000 sheets of foundation into Greece, Albania, and Yugoslavia immediately after the war<sup>8</sup>. Later, in 1959, Dr. Kulinchevich reported to *Bee World* that 60% of all bees were kept in moveable-frame boxes<sup>9</sup>. More current figures are not available, but David Miksa and his father Andrew, on a recent tour on the country, estimated that at least half the bees owned by small farmers are still primitive.

The most progressive beekeepers use hives with moveable frames, but as with the fixed-comb hives, there is a wide assortment of styles and sizes of equipment in use. The introduction of the modern hive began in northern Yugoslavia, in the republic of Slovenia. In many ways, the people of Slovenia are the most technologically oriented in Yugoslavia and have been pioneers in many fields—including beekeeping. The first school of beekeeping in the world was founded by the Slovene Anton Jansha, who also discovered the mystery of the airborne mating of the queen honey bee. It is perhaps not surprising that these people adopted the "Dzierzon" moveable frame hive a few decades before Langstroth built his first moveable-frame beehive in the U. S. A. The Dzierzon has small frames, and boxes are stacked two or three high, but it is a bit clumsier to handle than the Langstroth hive which is used in North America, and lately the Dzierzon has been losing its appeal.

Another common modern hive style is called the A. Z., which stands for its instigator, Anton Znidarschich. This usually has two chambers of nine frames each, stacked one on top the other. This sounds similar to our American setup, but the A. Z. is

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*Continued on Next Page*





Moveable bee-house with A. Z. hives.

### YUGOSLAVIA... Cont. from Page 24.

constructed so that the frames must be manipulated through a door at the back of the hive.

One peculiar use of the A. Z. hive involves the bee-wagon. The beekeeper enters the wagon via a ladder in the back of the trailer and walks behind the beehives, which are stacked in the wagon permanently and lined up on his right and left (photo #2 shows such an arrangement with 33 hives visible). Such a set-up is common in eastern Europe and enables the beekeeper to easily move to new nectar flows. In Lithuania, Balzhekas says the moveable bee-houses are moved three times a year and he claims that they require 40% less labor than conventional systems but bees tend to drift, productivity is low, and the moveable bee-wagon is not recommended<sup>10</sup>.

For a rather long time, the horizontal hive of 20 frames, all in one long layer, has been popular. In Canada or the U. S., 20 frames would fill two chambers stacked vertically, although even here, the long hive has seen applications in special areas: David Miksa used long hives for several years in Florida for the production of queen cells via an induced supersedure situation and a progressive honey farm on Vancouver Island finds long supers well suited to the northwest coast climate and flora conditions. This hive style may be especially suited to southeastern Europe because of the tendency of the indigenous Carniolan race to maintain compact brood nests, although Sulimanovich considers it to be too small to take maximum advantage of good nectar flows<sup>11</sup>. The long hive is often

enlarged by the addition of honey supers above it, in essence creating a multi-storied unit more akin to our own Langstroth hive,

Although there is a very wide assortment of primitive and modern hives, the Langstroth appears to be the current box of choice among new beekeepers, but even where it is common, it is not unusual to find single story, double story, and story and half colonies in the same apiary. Dr. Kulinchevich sees the variety of hive styles as the single most troubling aspect of Yugoslav beekeeping, and he points out that the various kinds are not limited to a single region, but scattered throughout all of Yugoslavia<sup>12</sup>.

### HONEY PRODUCTION

Good beekeepers routinely produce from 20 to 30 kg, but the thousands of primitive hives (which average 2 to 4 kg) reduce the overall national average considerably. The low average of 10 kg (22 lbs.) from Yugoslavia's 750,000 colonies is indicative of the beekeeping systems rather than the available nectar flows, as Sulimanovich reports a Alovne beekeeper using a Farrar two-queen system housed in modified Dadant equipment was averaging over 100 kg (220 lbs)<sup>13</sup>, and in the opposite end of the country (Montenegro) in 1956, Kulinchevich reported a strong colony yielding 330 lbs.<sup>14</sup>.

A variety of sources of nectar and pollen are available to the bees as early as February<sup>15</sup>, and stimulate the colonies to develop large populations in time for the principal honey source, the acacia, which blooms in May.

Izdnje says bees may gather 7 to 15 kg of honey per day from it. He also says "a hectare (2.2 ac.) of black locust forest, thick and dense, may be able to yield up to 1000 kg of honey"<sup>16</sup>. In PA, it seldom yielded anything at all, but perhaps one year in four we would see from 30 to 50 pounds of honey. The other years would generally be cool, dark, or damp. Kulinchevich reports that it is seldom a failure in the Yugoslav climate, with strong colonies usually netting 20 or so lbs. per day or more than 80 kg for the entire blooming period<sup>17</sup>.

The other major sources of honey are basswood (*Tillia europea*), rapeseed (*Rapus oleifera*), sunflower (*Helianthus annus*), and the sage (*Salvia pratensis*). The sage is found along the coast which has a climate similar to that of CA. But the Yugoslav sage is a different subspecies from either the black, white or purple varieties of the American west coast and apparently do not yield as well.

Drugo Izdanje concludes his book "Radovi na Pchelinjaku" (The Tasks of the Apiary) with the statement that only about 3.5 to 5 million kilograms (8 to 11 million lbs.) of honey are produced in Yugoslavia, while he projects the possible production could be 16 million kg, if the bees were better managed<sup>18</sup>.

### DISEASES AND PESTS

Honey bee tracheal mite and *Varroa jacobsonii* mite both exist in Yugoslavia, and the latter is widespread, but the worst pest or disease is American foulbrood<sup>19</sup>. In Yugoslavia it is called Americhka bolest, which means "the American disease", and inspite of all efforts to dissuade

*Continued on Next Page*





them, the small farmers and beekeepers feel that it was given to them by the Americans (hence its name)<sup>20</sup>. When an inspector finds AFB, he must burn the bees and equipment and the owner is refunded for his lost equipment from a special fund set up by beekeeper's contributions<sup>21</sup>.

Bees with varroa or Acarine are not destroyed. The tracheal mite was first discovered in 1954 along the Austrian border. It is still believed to be confined to northern Yugoslavia. If a beekeeper wishes to move his bees out of an area known to have the tracheal mite, he is supposed to first call an inspector who takes an unspecified number of samples. If the mite is not detected, he may move them. If mites are found, the beekeeper is required to treat them several times with Folbex strips (a burning strip releasing one gram of chlorobenzilate). Folbex is provided free to all beekeepers by the government. The bees are then reinspected and if found free of the pest may be moved<sup>22</sup>. The literature which I have consulted does not indicate the level of sampling, but it can be assumed that the Folbex treatment must be highly effective because it would not be economical to sample the bees at a level high enough to be nearly certain that absolutely clean bees are being moved — it would take 458 bees per hive to be 99% certain that the mite level is less than one bee per hundred<sup>23</sup>.

Probably no other beekeeper in North America has had the opportunity to pull twenty-one varroa mites off of one queen bee, but David Miksa did exactly that while inspecting some bees near Zagreb. The owner of the hive had complained that his bees were not doing well. David found that the colony was absolutely rotten with American Foulbrood. He quickly found the queen among that small population. The shock was in seeing all those varroa mites clinging to her. With a tiny set of tweezers he gently pulled off the twenty-one mites and placed some into a sample jar. By taking the samples to a bee supply outlet, the owner of that hive was eligible for free Folbex strips.

After removing the mites, David put the queen down on a frame. "She wandered off as if there was nothing wrong with her!" he couldn't believe that the queen could actually have been covered with the external mites and still appear normal. David says he can see now why Yugoslav inspectors feel that American Foul-

brood is the more serious disorder.

## SUPPLEMENTAL FEEDING

The two most fascinating things learned in Yugoslavia, according to David Miksa, were the variety of uses that honey is applied too, and the sort of supplemental feeding given to bees in the forms of vitamins, minerals, and nutritional stimulants. Bees are not usually fed plain sugar water to stimulate them, rather they are fed syrups or pollen cakes enriched with a spectrum of important supplements.

David was so intrigued with the results of one product that he became an importer of the product called Forsapin, an additive for pollen cakes and syrups that was formulated by a bee research laboratory in Belgrade. It greatly aids the honey bee's ability to digest supplemental feedings and it gives them extra minerals which they need but sometimes lack. This combines to help colonies develop larger populations and to resist diseases and pests.

## HONEY SALES AND USES

Honey commands a far higher market value in most central European countries than it does in North America. It is thought of in a very different way. In Canada and the U. S., honey is seen as a healthy substitute for sugar. An effort is made to price and market it in a way that forces it to compete with sugar and artificial syrups. In Yugoslavia, it is not seen as substitute sugar, but instead is marketed quite apart from the grocer's sugar and syrup displays. Honey is used extensively in a wide variety of pharmaceutical supplies. Honey is an ingredient in most hair shampoos, in skin care products, even in shaving lathers. It is in cold and allergy relief medicines and is often seen in combination with pollen, propolis, and royal jelly. Apparently, there is a special esteem attached to it, and it is often considered first as a effective folk remedy to a very wide variety of disorders.

## SUMMARY

Yugoslavia is an excellent country for the beekeeper to explore. The people are friendly and appreciate visitors from North America and things are quite inexpensive.

There is considerable anxiety

about travel in Europe, but Yugoslavia has a recent history of neutrality and tolerance and is not the target of extremists. There are more Moslems (about 4 million) in Yugoslavia than there are in some of the Arab countries, and, Yugoslavia has good relations with the Arab world. On the other hand, two of the eight founding fathers of the new Yugoslav constitution were Jewish intellectuals and Yugoslavia has shown more determination and perseverance in bringing Nazi war criminals to justice than either the U. S. or Canada has shown.

Although it is sometimes called a "Communist" country, travel in a Yugoslav city is safer than in Toronto or Los Angeles, and all western newspapers and magazines are readily available in newsstands. Interestingly, more of the agricultural land (99%) is in the hands of individuals than in the U. S. A., where vast acreages are controlled by huge corporations<sup>24</sup>. It is an interesting, tolerant country with a nice mix of the rural and urban. §

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## ACKNOWLEDGEMENT

I appreciate the suggestions and resource advice and material offered by Dr. Toge S. K. Johansson; and the help, photographs and information provided by David Miksa.



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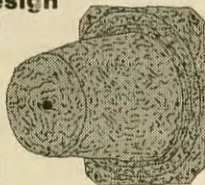
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# They Won't Get Away With THIS

# SWARM RETRIEVER

By JOHN IANNUZZI • R. D. 4 • Ellicott City, MD 21043

Equipment is the key when capturing swarms. It's much easier if you remember to double up small swarms by putting them on the same stand and separating them by means of a double screen, thus saving an extra bottom board and inner and outer covers. Later, they can be combined on the same spot by using the newspaper method — replacing the screen by a sheet of slit newspaper and letting the two small swarms unite themselves in the process, with the weaker queen losing out.

But the actual capture of a swarm is in itself usually an experience, and the equipment used to attain a new bunch of bees can be the difference between actual capture and "You should have seen the one that got away because it was too high to reach". I have recently acquired a device called the "Swarm Retriever and Bee Blower", that, when used properly, is an ideal tool in swarm retrieval. This is how it works.

The Swarm Retriever is in essence a vacuum cleaner. One end draws up the bees for retrieval, while the other blows them away, used in clearing supers. The motor is attached to an outer box; an inner box holds the captured swarm. The theory is sound and the following is my experience with it.

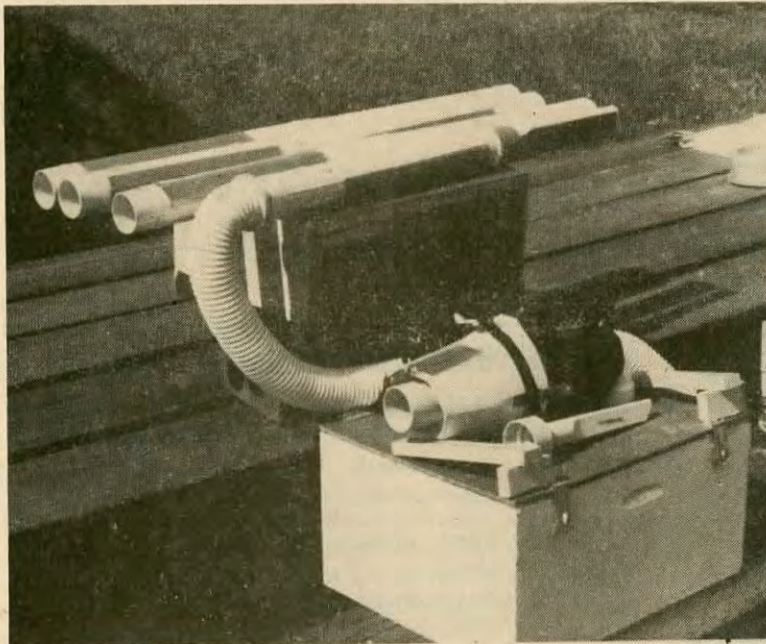
## Description

The heart is a small vacuum made by ShopVac, rated 120 volts, six amps. It comes with a 5-1/2 foot carrying strap, and a 17 foot, 4" three-wire cord attached to a motor which is mounted on the hinged lid of the top of a box. This box is 19-7/8" long, 16" wide and 10-1/8" deep. The lid is kept closed by two clasps — the type

13-1/2" x 8-1/8" which just fits inside of a deep hive body. Its two long walls are screened; the back short wall has a foam rubber cushion to break the fall of the suctioned bees, while the last wall is made of solid wood. This wall does have the vacuum hole, or swarm entrance if you will, measuring 2-5/16", the inside of which carries the flutter valve attached to a grooved plastic

fitting by a circular spring acting like a rubber band. The base of the inner box is a sliding metal bottom — for easy evacuation of captured bees.

It also comes with seven, 18" rigid plastic extension tubes used for reaching difficult or otherwise impossible to reach swarms. Attached to the unit itself is a 56-1/2" flexible tube, which can be extended a bit further if required. Two other rigid, crevice-tool shaped plastic pieces, which go on the outermost end of the assembled wand, are marked "blower use only", which is 11" long, and a 14-1/2" piece labeled "retriever use only".



The screened inner box can be seen in the background. The sectional tubing is attached to the flexible one for the high swarms. The crevice tool in the foreground is attached for blowing, NOT retrieving. The wooden "scrapers" on top of the cover are spacers to help keep the screened box aligned once inside the outer box. (Spacers are author's adaptations.)

that padlocks can be attached to. The box has a 2-3/8" hose opening. It is air tight, with some cushioning beneath to further seal the opening.

The outer box, constructed of plywood, cradles an inner one, 18" x

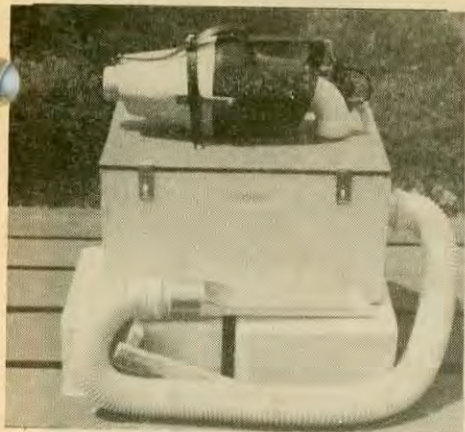
## Using the Device

When used in the retrieve mode, (that is, for jailing swarms), air passes from the "Retriever use only" end of

*Continued on Next Page*

**After one good swarming season, this machine would probably pay for itself in both new bees and increased honey production the second year.**





The swarm retriever ready for action for clustering honey bees within arms' length. For use as a bee blower, the hose is attached to the free end of the ShopVac.

the wand, into and through the outer box, causing the bees to be sucked into and kept in the inner box.

When used as a blower to clear supers, the motor assembly can be left on the box — saving the reattachment time later. Air passes through both boxes and out the machine port. In other words, in this mode of operation the hose is attached to the ShopVac and not to the box.

Extra inner cages are available for extra swarms, and are easy and quickly changed. Observation



The swarm had already been captured when this picture was taken. The author is lowering the wand.

Retrievers are also available so you can see how full your inner box becomes. This is good for both demonstration purposes when at a homesite and also to avoid overfilling the box.

### My Experience with the "Swarm Retriever"

There are several rules of thumb to keep in mind with this machine, and my experiences with it point them out. First, the flexible tubing should at all times be kept fairly straight, as bends (and certainly kinks) will cause large amounts of bees to jam the hose, reducing suction. Maintaining a straight hose is easy to do, and any one who has ever worked with a garden hose will probably consider it second nature.

Another consideration is to check the flutter valve often, at least after every third or fourth use. This valve is the small, plastic mechanism which opens as the bees are drawn into the inner box, and automatically closes when the motor is shut off so the bees cannot escape. This small valve is crucial in the operation of the retriever. Remembering the garden hose example again, it is similar to the familiar gasket, which, if not replaced when necessary, can cause the hose to be less than adequate for the job.

### Summary

As with any machine with more than one moving part, routine maintenance and checking are required. This is only common sense, as frequently used parts may need replacing. Having extra parts along on calls will eliminate any serious problems. When used according to manufacturers recommendations, this machine will perform as expected, and will be an outstanding addition to a swarm collectors tool box.

Another consideration is that when out on multiple swarm calls, this machine can be the difference between making 5 calls after supper, and being able to only take one. This not only makes you look good to those homeowners rescued from the swarm, it enables you to increase your stock easily, cheaply and quickly. In fact, after one good swarming season, this machine would probably pay for itself in both new bees and increased honey production — certainly a profitable thought!§

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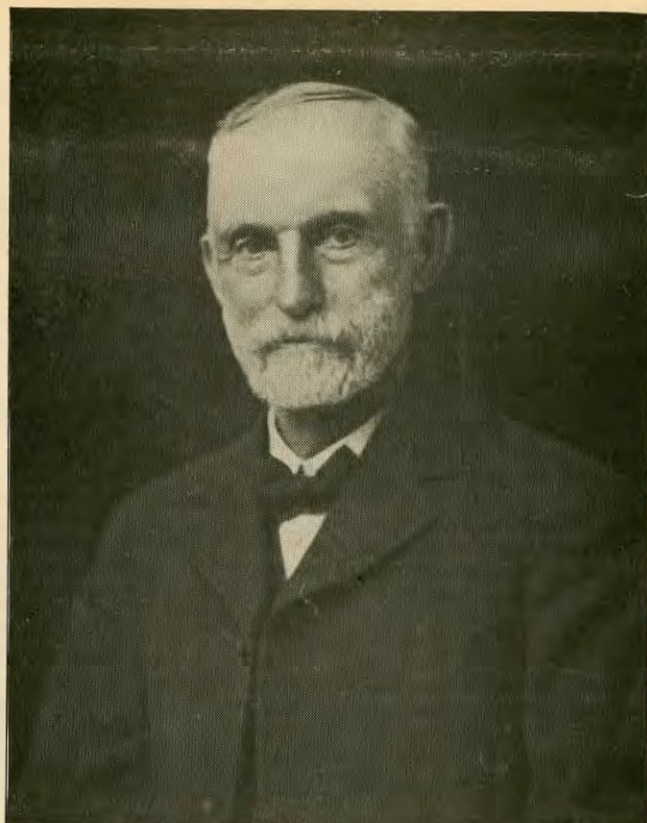
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# In The Beginning . . .



A. I. Root

One hundred fifteen years ago this month, a quarterly magazine made its' modest entry in the field of beekeeping. Although its' entry may have been modest, Publisher and Editor Amos Ives Root chose a not-so-modest title: "*Novices' Gleanings In Bee Culture; Or how to Realize the Most Money with the Smallest Expenditure of Capital and Labor in the Care of Bees, Rationally Considered.*"

A. I. summed up the goals and purpose of his work on the first page of Vol. I., No. I: "Remember at all times that Improved Bee Culture is our end and aim, and we trust no one will hesitate to give any facts from experience, because they may tend to overthrow any particular person or 'hobby'."

He went on, stressing his belief that false adver-

tising was the current bane of this infant industry, and even requested that readers help rid beekeeping of these less than honest transactions "Please give facts all you can without regard to their bearing on individuals, if they are of such a nature as to benefit the masses. Without further moralizing we will try and let our little Journal show for itself what it is".

And for 115 years, A. I. Root's little Journal has done just that.

From January, 1873 to the present, *Gleanings in Bee Culture* has been published exclusively by The A. I. Root Company. During that time, however, eight others have filled A. I.'s editorial chair. This is their story.

Initially, A. I. wrote much of the Magazine himself. As circulation and fame grew, more space became devoted to contributions of recognized experts in Bee Culture, correspondents in the field and subscribers with questions or comments. For 11 years A. I. continued as Editor, but other interests and business began to consume more and more of his time, and he gradually turned over Editorial duties to his son Ernest.

Another son, Huber, made many contributions, especially as a traveling correspondent. A. I. continued making contributions for many years

after his 'retirement' in his column "Our Homes" and others.

E. R. Root brought with him a love of bees that never waned. He had no other love or hobby, and his eyes would light up, even in his 90th year when the subject was brought up. His greatest contribution to the industry was his advocacy of the food chamber hive, and he enriched the pages of *Gleanings* by his travels to beekeepers meetings and calling on professional beekeepers in many states.

During his tenure as Editor, E. R. brought to print such writers as C. C.

Miller, G. M. Doolittle, J. E. Crane, E. F. Phillips and even C. P. Dadant, then Editor of the *American Bee Journal*. He continued the columns "Heads of Grain from Different Fields", and "North, South, East, West", enlightening readers of all manner of Bee Culture and conditions around the country. "Gleaned by Asking" was as popular as ever, as was the "Editorial", both of which were informative in the areas of beekeeping and living in general.

During the late teens, George S.

*Continued on Next Page*

GLEANINGS IN BEE CULTURE





(L to R) Son Huber, A. I. Root and son, Ernest

Demuth came on board as Assistant Editor, and then finally Editor. His background was Government Laboratory work, and he was a successful comb honey producer, too. Until he died (quite suddenly in the 30's) he showed that even comb honey could be produced — in abundance — by the let-alone-plan. He was also widely known for his work in swarm prevention.

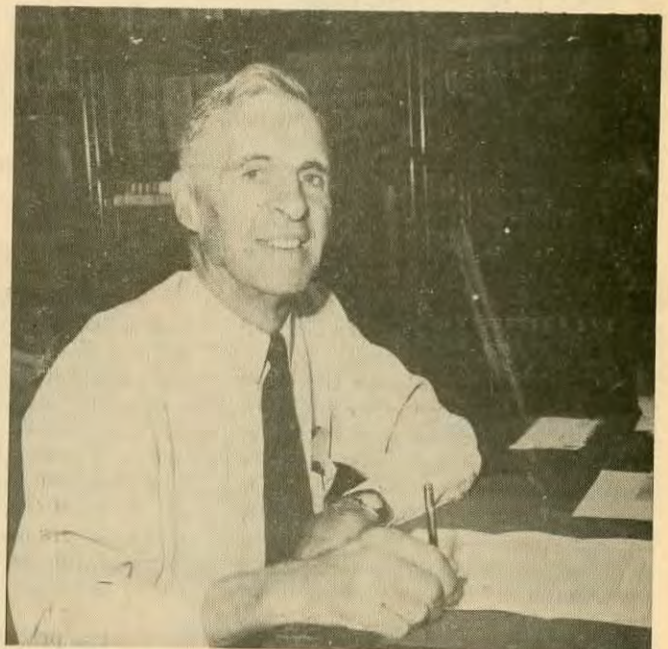
As Editor, Mr. Demuth continued the traditions laid down by his two

predecessors. E. R. Root, H. H. Root and even A. I. Root made contributions in their respective fields. Mr. Demuth started his own column, "Talking to Beginners", which was universally popular. He let the others write on the nature of life, and the current politics of the beekeeping industry.

Also during his time, M. J. Deyell came to work for the Root Co. He wore many hats early on. He was Apiary Manager, business manager, Gleaning's contributor and Associate Editor. After a stint back in school, he returned to the Root Co., working primarily on the *Gleanings* staff and

*Continued on Next Page*

### George Demuth



Jack Deyell





## John Root

as Apiary Manager.

With the death of Mr. Demuth, Both Jack Deyell and E. R. Root Edited the magazine for a bit, but shortly Jack took over the reins.

Jack Deyell was probably the best commercially experienced beekeeper who served as Editor that *Gleanings* has ever had. Like many, "It was love at first sight. From the day I opened my first hive I knew I was born to be their keeper," he said — and never changed.

For several years he continued to manage the Root Apiary of about 1000 colonies and edit the magazine, but became full time Editor in the early 30's.

The list of people who went under Jack's Editorial pen is a who's who in the annals of modern beekeeping: Allen Latham, Grant Morse, Frank Todd, E. F. Phillips, John Jessup, C. L. Farrar, Propolis Pete, Alan Root, J. H. Hambleton, F. B. Paddock, Carl Killion, Eva Crane, Charlie Koover, Roy Weaver, W. L. Cogshall, E. J. Dyce, S. E. McGregor, Harvey Lovell, Richard Taylor, Charles Mraz, E. C. Martin — the list is far too long to be completed here.

It was during this time that John Root started as Managing Editor. Under his direction, each issue of *Gleanings* was tight, well organized and well written. Deyell's monthly column "Talks to Beekeepers" was

always a gem, supplying a surplus of information for beginners, sideliners and more advanced beekeepers alike. Moreover, several of Today's *Gleanings* contributors started their careers, notably Dr. Roger Morse's Research Review.

In the early 60's Jack Happ started as assistant Editor. His background was as a trained entomologist, and he brought a new dimension to the magazine. One of his early innovations was to change the focus of reader contributions and published the "Mailbox", still a popular section of the magazine.

Under Jack Happ's leadership many changes in design and format evolved, paralleling the magazine industry in general. Most notable of these was the change in size in 1971, from the digest to the present format.

Many industry leaders continued their writing careers under Mr. Happ. Among these are Glenn Gibson, Harry Rodenberg, W. A. Stephens, Toge Johansson, Gustave Telschow, Micheal Burgett, Evert Oretel, John Ambrose, Harry Morris, P. F. Thurber and many more.

In the early 70's John Root became Associate Editor, and in October of 1972 occupied the Editors Chair. At the same time Larry Goltz started as Managing Editor.

John was (and still is) an extensive traveler, and a remarkable photographer. The pages of *Gleanings*

during his command reflect these skills. Full page photo spreads, along with information on nearly every large gathering of beekeepers graced the pages each month.

During John's tenure several regular columnists became mainstays for the magazine each month. Most notable were Richard Taylor's "Bee Talk", Francis Holmes on honey plants, and Charlie Koover's "From the West".

In January, 1975, Larry Goltz became Editor, while John Root remained as Associate Editor. Increasing demands on John's time from Root Company business led to this move.

During Larry's tenure as Editor other industry newcomers got their start. Among these, "Siftings" by Charles Mraz, James E. Tew, Roger Hoopingarner, "The Collectors Corner", by the Stollers, "Strictly

*Continued on Next Page*

## — Jack Happ







**Larry Goltz**

Backlot" by Carl Callenbach, Ann Harman, "The Old Timer", John Bolf, "Beekeeping Technology" by now Dr. James E. Tew, "Capping the News", Rollin Moseley, and of course Grant Morse continued his excellent monthly column.

Larry was Editor during the latest heyday for beekeeping, when interest in this pastime swelled. Thus did the magazine. Color inside and on the cover became common, and pages per issue

increased. The layout and design continued to evolve under Larry's guidance, and the articles, columns and editorials grew and prospered.

In April, 1983, Mark Bruner became Assistant Editor, and in January 1984, Editor. Mark continued in that position until late 1985.

During the time he was here Mark continued the innovations and evolution started by Larry and even earlier by John and Jack. Under this Editor's pen came such authors as Steve Taber, the Krochmals and many others. Of course P. F. Thurber continued his excellent reports, Amos Arbee on folk art, Roger Morse

on Research, James Tew, Charles Mraz and Richard Taylor. Also, he introduced Clarence Collison's Testing column and Elbert Jaycox's monthly contribution. He continued to use color, inside and out as an editorial and advertising feature.

One renewed item brought out by Mark was the Editor's Column, entitled "Notes From The Beeyard". Arguably one of the best writers in Gleanings history, his insight into this industry's workings and members will be long remembered.

Finally, ninth in this line of Editors, Kim Flottum inherited A. I.'s

red pencil early in 1986. With an agricultural and research background, and married to an excellent beekeeping author, he brings yet another focus to *Gleanings In Bee Culture*.

Through 115 years of tradition, evolution and even revolution, the Editors of *Gleanings in Bee Culture* have carried out the early promise of A. I. Root — Improved Bee Culture is our goal and our Aim. §

**Kim Flottum**



**Mark Bruner**





# Ask Dr. Beebe

By DR. B. B. BEEBE

Dr. B. B. Beebe, noted bee expert, has graciously agreed to answer questions sent in by readers from time to time. We are proud that he has chosen to honor *Bee Culture* by offering to share his profound wisdom and extensive apicultural experience with us. Address your requests to: Ask Dr. Beebe, c/o *Gleanings in Bee Culture*, P. O. Box 706, Medina, OH 44258.

Dr. Beebe received his B.S. (for reasons which will become obvious) and his Ph.B. from Brighton University, better known as "B.U." Throughout his undergraduate career, he achieved a uniform 3.00 average (straight B's). His fame was assured after the publication of his renowned thesis, "Tarsal Articulation in *Apis Mellifera*," better known as "Bees' Knees."

**Q.** *How can I prevent my bees from swarming?*

**A.** The prevention of swarming is one of the most difficult aspects of beekeeping. Some writers recommend requeening every two years to make sure your queens are always young and vigorous. Others emphasize having lots of space for brood, calling for at least two deep hive bodies as the brood chamber. These methods work moderately well, but some swarms still issue from colonies so treated.

Through years of laborious research, I have at last found the secret to total swarm control. Of hundreds of colonies I have treated with my special method in the past seven years, not one has cast a swarm. I can now share my secret with you.

First, make sure your equipment is new or in very good condition. Seal any cracks or other openings, and check the squareness of the hive bodies to ensure that they meet properly. Second, seal the hive entrance completely with a tight-fitting 3/4" square stick and tack it in

place to ensure that it cannot be dislodged.

Third, remove all frames containing brood and shake out or otherwise remove every bee from the colony. The only sure way to keep a swarm from issuing from a hive is to be certain that it contains not one single bee!

**Q.** *What is the best way to avoid stings?*

**A.** Raise rabbits.

**Q.** *Should I worry about Africanized bees?*

**A.** No, you should worry about Australian bees. These are not yet found in the U.S., but they are expected to arrive by 1997. They are the world's only marsupial bees as they carry multiple stings in a pouch called a quiver. They do not actually fly, but they can jump long distances like a kangaroo. When their sting supply is exhausted, they have been reported to deliver a kick which can be deadly.

**Q.** *My neighbor threatens to sue me if one of my bees stings her. What can I do?*

**A.** "You can catch more flies with honey than you can with vinegar." Try giving the old bat some honey now and then, or maybe some garden produce as you explain the value of pollination. Just be as nice as you can to her, and help her overcome her fear. If that doesn't work, I know a guy named Joey who is good at dealing with problem people. Call 555-1212 and be ready to send flowers.

**Q.** *There are so many differing opinions on how best to manage honey bees that I am royally mixed up. Some experts say that I should crowd the bees down into a tiny brood chamber just before the honey flow in order to suppress brood rearing and then give them lots of*

*supers for honey. Other experts say that this method promotes swarming and absconding; they recommend three deep supers for a spacious brood chamber and claim large yields with this method. Last year, following a middle-of-the-road "1-1/2" brood chamber technique, I averaged only 3-1/2 lb. of honey per colony. This year, should I give my bees a very large or a very small brood chamber?*

**A.** Yes.

**Q.** *How can I keep skunks away from my beehives?*

**A.** If you keep bees in the country or suburbs, skunks can get into your colonies at night without your ever seeing them. You'll know it, though, when your bees become mean, attacking and stinging you even when you're far from the hives. You may see scratch marks or gray discoloration at the hive entrances, too. That's where skunks do their damage by scratching to attract guard bees at night, then crushing and eating them.

You can prevent skunks from gaining access to your hives in a number of ways: chicken wire screen across the front, a hardware cloth screen bent into a "U" and stapled above the entrance with the cut ends pointing out, or a "bed-of-nails" device where the pest would have to stand in front of the hives. If you have many hives, you may find it worthwhile to dig a moat around the apiary. Stocking the moat with piranhas has been found to be particularly effective in preventing skunk predation. For areas with difficult skunk problems, the attack leopard may be a viable option, but first stock up on tomato juice. The trip-wired shotgun technique is **not** recommended, as it tends to bag more beekeepers than skunks. If all else fails, move your hives into the master bedroom. Don't forget to leave a window open. §



## Making Mead

First collect your materials. Honey: the neon messages of corolla colors flash like advertisements in a language absolutely material; sap secreted in the center of buckwheat, clover, goldenrod — names that allude to pastoral origins, essential experiences, reality, that of which we cannot speak; a summer meadow populous with blossoms and bees. Mix it all up: honey and water, yeast and the chemicals; sodium bisulfite, ammonium nitrate; the latest last words from Western civilization. Find good books for pounds to the gallon, days of fermentation, myths and gifts of eloquence of the bards.

Put it in a quiet corner — no bright lights, no barking dogs — let it work, froth and foam and smell like unspeakable natural processes. Siphon the good liquor off the top into a clean carboy; each time you rack it there's a draft to try; the first is too rough, too cloudy, too acid, too yeasty, redolent of its raw sources; many rackings, many drafts, always leaving behind the lees, and finally when it's clear as a simple declarative sentence, when a single glass can make you hear the humming of wildflowering fields, bottle it, age it, and give it a name.

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# FUNNY BEESSNESS!

By ROGER WELSCH

One of the most remarkable and enduring characteristics of Americans is their sense of humor. Whatever the situation, Americans find some reason or another to laugh.

Good humor is, after all, a part of our American pioneer heritage. An early visitor to this country remarked in his journal that he was told by one of those wild American colonists that a cow had recently fallen through the ice into the Hudson River, and the water was so cold that the cow gave nothing but ice cream well into the summer.

Benjamin Franklin is alleged to have told visitors to his home in Paris, where he was ambassador, that American sheep were so fat that they had to pull little carts behind them just to carry their tails.

The pioneers spoke of land so poor that the only thing that could be said of it was that if it hadn't been there, there would have been quite a hole, or so barren that a first-rate farmer would have had trouble raising a fuss on it, even with a gallon of good whiskey.

Bees and beekeepers, of course, have been a part of American History from the nation's earliest years, and a part of its literature and folklore too. In James Fenimore Cooper's book *The Prairie*, one of the principle characters is a bee hunter, because in their search for bee trees, it was these men who were often the most careful explorers of the new frontier country.

And bee culture certainly was not immune to the rage for tall tales that was one of the most distinctive parts of pioneer America. It was a pioneer Plainsman who related the story about the time he took a herd of bees from Nebraska to Texas on the hoof. He said that they were moving so fast when they hit the Texas line they upset the hive as they went in. "The next morning," he said, "I made a noise like sage brush in full bloom and as the bees came out of the hive, the consignee counted them and found that I hadn't lost a single bee. We branded 'em and notched their ears that very afternoon."

Another old-timer didn't fare so well in his efforts to keep bees on the


frontier. He said that his apiary proved to be unprofitable because, while the bees flew out to the flower fields just fine, they got so loaded down by the rich nectar of the bumper crop exploding from the rich soil of the new land that the bees had to walk back to the hive. He tried to solve the problem by rubbing glycerine compound on their poor, blistered feet. Every application took a little over two quarts of balm—an unanticipated expense.

He said that the little rascals finally got so spoiled by the special treatment that when he approached the hive, the footsore bees would roll over and hold their feet up in the air so he could rub on the ointment.

A lot of things have happened in America over the past two hundred years, but the laughter has stayed very much the same.

And that's what *Funny Beesness* is all about — a chance to get a chuckle from the beekeeping scene. Send us your favorite stories, lies, jokes, bumper stickers, signs, experiences, good times, bad times, whatever — especially if they are about bees, but even if they are not — and in return for the best story we use in *Funny Beesness*, I'll send you a copy of my book *Shingling The Fog* and a matched set of aluminum handkerchiefs.

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# BEE TALK

By RICHARD TAYLOR • R. D. 3 • Trumansburg, NY 14886

*"Colony morale is one of the MOST IMPORTANT aspects of beekeeping I can think of. It is affected by nearly every colony manipulation made."*

I don't think I've ever talked about colony morale in these pages, so maybe that would be a good subject for rumination on this cold winter day. It is a subject which is not only interesting in enhancing our understanding of the honey bee colony, but also worth knowing for improving honey production.

Colony morale refers to what can be broadly considered the psychological state of the colony, how well the bees in that colony are working harmoniously together, their industriousness as a colony — or, very broadly, how "happy" they are. I know that is an absurd way to put it, if taken literally, but it nevertheless expresses very well the idea I am trying to convey. We speak, without hesitation, of a "cross" colony. I see no reason why we should not similarly speak of a "happy" one.

It is a very important concept to apiculture, and one which some beekeepers seem to have no grasp of at all. Thus, you sometimes find beekeepers, and even writers on the subject, who assume that all you need to do in order to improve the productivity of a colony is somehow increase its population, perhaps by just adding more bees to it. But such measures sometimes do more harm than good, for the colony is sometimes literally demoralized by such manipulations and will go through the rest of the season just marking time, getting nothing done in the way of gathering a crop, even though there are plenty of bees there to do the job.

I have long noticed that, when I set up a new apiary, I do not get much of a crop from it the first season, even when the colonies are strong and set up properly. This is, I believe, the consequences of a less-than-peak morale. The same thing may explain why I have never had

good luck moving bees temporarily into areas of buckwheat bloom, when long established apiaries in those same areas put up good crops of buckwheat.

Beekeepers have sometimes united swarms to existing colonies, greatly boosting the population, and have then been surprised to discover no commensurate increase in honey production, even though the swarms were united peacefully. A swarm can sometimes be hived in a super, for example, and then that super simply added to an existing colony. But you don't get much more honey that way, if, indeed, any more, because the bees are slightly demoralized by this sudden, drastic and unnatural change.

On the other hand, if a swarm is hived, and then that hive is set on the stand of the colony that threw the swarm, this parent colony meanwhile being moved off to one side, you get a spectacular increase of honey production. The morale of a new prime swarm is at its very peak. No colony in your apiary works harder. And when the field bees from the parent colony are added to that swarm, in the manner just described, then that new swarm's morale is preserved even while its population is, in this very natural way, greatly augmented.

Probably nothing so totally demoralizes a colony as the irreparable loss of its queen, as when the colony cannot, for whatever reason, raise a new one. The bees are listless, their flight to and from the entrance desultory. Eventually laying workers appear and then, soon after, wax worms, but the bees have become too demoralized to make any attempt to deal with the wax worms.

It is on the warm spring days that colony morale is highest, and the beekeeper must be alert to take advantage of this by getting supers on in time and avoiding disruptive manipulations. In the spring, when forage is abundant, the world seems to the bees to hold great promise. Nectar and pollen are coming in in abundance, the queen is laying eggs at top speed and the brood nest is rapidly expanding. At this time of the year you can walk through your apiary with face and arms bare, without any fear of stings. The bees are too happy to want to stir up trouble.

Several beekeeping practices, some of them quite common, have a negative effect on colony morale and thus on honey production, and should therefore be avoided. Taking a hive all apart and smashing all the queen cells, for example, has this adverse effect. Simply removing a few combs of brood, on the other hand, and replacing with empty combs, does not adversely affect morale, provided it is done casually and without a great deal of smoke. The morale of a colony gets a setback if the hive is taken all apart, using lots of smoke, for whatever reason, such as checking for disease. Such drastic manipulations should therefore be done between honey flows when possible, rather than during a flow. A colony that is drastically manipulated at the



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*Continued on Next Page*



peak of a honey flow receives a lasting setback, especially if it is subjected to rough handling and much smoke.

A colony of bees has a life of its own. It is not just an assemblage of bees that happen to share the same living quarters. A colony, like any living organism, is highly organized, with precise divisions of labor and function. If you upset that organization then the colony as a whole suffers, even though not a single bee perishes in the process.

Good apicultural management requires an awareness of this organization and the resulting hive psychology. The lesson to draw is not that a colony should simply be let alone to go its own way, but rather, that colony manipulations should be kept to a minimum, and then done carefully and at the right time. Don't ever fight the bees. You will lose if you do. Work with them, never against them, and try to enable them to thrive, as a colony. §

Questions and comments are welcomed. Enclose a stamped, self-addressed envelope for prompt response, and use the Trumansburg address, above.



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## What Do Judges Look For?

# WINNING WAX

By J. T. W. SCRUBY  
Pilgrams Ridge  
Markway Godalming  
Surrey, GU7 2BW  
England

The production of beeswax entries for a show calls for a lot of patience and care. Basically, the process is not difficult, but it is difficult to produce a product which will win top awards. However, this is no argument for not "having a go", because one does not always find really top class exhibits in every show. So a good, carefully prepared piece of wax may well rank for an award, and exhibitors should be encouraged to enter the wax classes. This class is an attractive one and looks well on the show bench.

It is not essential for a show judge to have prepared previously an entry for a wax class himself, but it is a help to him, as a judge, if he has. Among other things it puts him in sympathy with the exhibitors.

When judging this class, the first thing to do is to check that all the

the judge could pick up each exhibit, inspect it, smell it, feel its texture, and look for uniformity of color. This will be a quick general inspection, but it may enable the judge to reject any particularly poor entries at once.

He will now start his major inspection of the entries. First he can examine each exhibit with a magnifying glass, looking for specks of dirt, flaws in the surface and small dimples. He should look for waviness on the side which would have been uppermost when molding was done. The quicker the wax was allowed to cool, the more likely that there will be waviness on this surface. The judge should look for a flat, unbroken surface.

The sides and the surface which was at the bottom of the mold, should be unscratched, and flawless. They are frequently scratched when the

caution.

The texture should be felt with the hand, and each exhibit should be rubbed with the pad at the base of the thumb to get its feel, and it should be smelled after doing this to catch the aroma.

There should be a slight stickiness to the wax. Perhaps one might say it ought to have "life" and not feel dead. Also there should be a pleasant aroma. This is not always the case, because there is no limit usually put on the age of wax which may be shown. Older wax tends to lose the delightful smell of freshly molded wax, and it feels dry.

Wax tends to pick up the smell of the place where it has been stored, and it is not unknown for an entry to have a slight smell of wax moth deterrent pointing to the wax having been stored for some time in less than

**Smell, Texture, Color,  
Purity and "Life" are  
all important.**

entries comply with the rules. Frequently these specify the method of labeling, and that the entries must be of a certain thickness and weight.

Labelling is often done by putting one label on the exhibit and one on its container. It is a moot point whether the judge should look under the label on the exhibit, but there does not seem to be any reason why he should not. The label may cover dirt, a flaw or other mysteries.

Thickness and weight are checked with a ruler and scales, and the entries should comply with the relevant rules. Such rules are specific, and there is little excuse for failing to comply with them. So if these rules are broken, the judge should seriously consider disqualification.

Having dealt with these details,

cake of wax is being removed from the mold. They should not be pitted or have other flaws. If the judge finds some shortcoming in the entry he will have to assess how significant he thinks they are. It is unusual to find many flawless entries.

The color of each exhibit should be uniform, and any entry with a color gradient, or with two colors of wax in it should be down graded and possibly put aside.

There are many shades of wax which are pleasing to the eye, and the judge may have his own ideas. It is recommended that priority be given to colors in the range of pale primrose (yellow) to orange. A dark grey or bluish color is possibly due to propolis mixed in with the wax, and a definite whitish tinge should be viewed with

ideal conditions.

When the judge has got this far he has to put the exhibits in some order. While this is being done, the steward should be very careful to watch that labels go with the exhibits, otherwise confusion will subsequently reign.

The judge will favour those entries which are well molded. Special importance should be attached to the color and the aroma. Plasticity is significant, and preferential treatment should be given to freshly molded wax, as compared to the old faithful entries, which have probably done the rounds for a few years. But in fairness, these are often very good exhibits, and must be given full credit for what they are.

*Continued on Page 43*





# HOME HARMONY

By ANN HARMAN  
6511 Griffith Road  
Laytonsville, MD 20879

By this time all the holiday goodies have been reduced to a few crumbs on the bottom of the cookie tin. All those who contributed to the disappearance of turkey, honey glazed ham, honey fruitcake and cookies now find themselves feeling overstuffed and ready for some "weight watching" meals.

Give the birds the crumbs and fix yourself and family a salad. See what vegetables are plentiful and cheap and create your own combination. A salad of just two or three different types of lettuce, with a tasty dressing, is a delightful salad. This salad dressing recipe is very tasty and enhances a simple salad of avocado, raw or cooked vegetables, or lettuce. Another nice attribute is that it does not separate.

## Creamy Honey French Dressing

1 can (10 oz.) tomato soup, undiluted  
1/2 cup honey  
3/4 cup cider vinegar  
1/4 cup water  
2 cups salad oil  
1 teaspoon salt  
1 teaspoon dry mustard  
1/2 teaspoon paprika  
1 teaspoon celery seed  
1 clove garlic, minced

Combine all ingredients in blender. Whirl until well mixed and creamy. Keep refrigerated until ready to use. Makes about 6 cups.

*DELAWARE HONEY LOVERS  
RECIPE GUIDE*

Delaware Beekeepers Assoc. &  
Delaware Dept. of Ag.

Pork producers have heeded public demand for lean pork chops. Another benefit — pork is a highly nutritious meat, an excellent source of iron and B vitamins. The following recipe will be welcome on a winter evening.

## Pork Chops with Honey Curry Sauce

6 pork chops, 1-1/4 inches thick  
3 slices bacon diced

1 cup finely chopped onion  
2 cloves garlic, minced  
1/2 cup soy sauce  
1/3 cup lemon juice  
2 tablespoons honey  
1 tablespoon curry powder  
2 teaspoons chili powder  
1 teaspoon salt

optional: 2 tablespoons light rum  
Saute bacon until lightly browned. Add onion and garlic; cook just until onion is tender. Add soy sauce, lemon juice, honey, curry powder, chili powder and salt. Mix and simmer 2 to 3 minutes. Stir in rum, if used. Cover; let stand 2 hours to let flavors blend, or store in refrigerator until ready to use. Arrange pork chops in shallow dish, pour sauce over chops and marinate 3 to 6 hours or overnight in refrigerator. Drain chops and save sauce.

To broil, place chops on rack in broiling pan. Place in broiler so top of meat is about 4 inches from source of heat. Broil 12 to 15 minutes on first side; turn, broil 10 to 12 minutes on second side. Brush chops frequently with marinade while broiling. Heat remaining sauce and serve with chops. These can be cooked on outside grill.

*PORK, JUST FOR THE JOY OF  
EATING*

National Pork Producers Council

Flank steak is a very lean cut of beef that has excellent flavor. However, care in broiling it is essential. If overcooked, flank steak can be impossibly tough. But with a bit of care it can be a tender and delicious steak.

## Marinated Flank Steak

2 pounds flank steak  
1/2 cup soy sauce  
2 tablespoons honey  
2 tablespoons lemon juice  
1 teaspoon ground ginger  
3 cloves garlic, finely minced  
Trim any fat from the steak and score deeply with diagonal slashes. Place in a shallow glass or ceramic dish. Combine remaining ingredients and pour over steak. Allow to marinate 4

to 6 hours or overnight in refrigerator, turning steak over occasionally. Drain steak and broil, either on outside grill or in preheated broiler, to desired degree of cooking, about five minutes on each side.

*THE NEW YORK TIMES  
NATURAL FOODS COOKBOOK*  
by Jean Hewitt

Something quick and nutritious for breakfast? Get the blender out the night before and your breakfast drink will be ready before you find your car keys.

## Orange Breakfast Bracer

3 tbs. frozen orange juice concentrate  
1 teaspoon honey  
1 cup cold buttermilk  
Place orange juice concentrate and honey in blender container; cover. Mix until well combined. Add buttermilk and blend until frothy. Serve immediately. Garnish with orange slice, if desired.

*REFRESHING DAIRY DRINKS*  
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Towards the end of the month your "sweet tooth" may be feeling a bit hungry. A mug of hot chocolate may well satisfy it and also bring a soothing end to a busy day.

## Mocha Hot Chocolate

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

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

*FAVORITE RECIPES  
FROM OUR BEST COOKS*  
Essex Co. (MA) Beekeepers Assoc.



## Answers To Testing Your Beekeeping Knowledge

- False** The size of the crystals in granulated honey is directly related to the speed of crystallization rather than sugar composition. The faster honey granulates, the smaller the crystals.
- False** Honey is primarily a source of carbohydrates with 95 to 99.9 percent of the solids being sugars. Even though honey contains some minerals and vitamins, it cannot be considered vitamin and mineral rich.
- True** Most honeys packed by commercial honey packers is made up of two or more honey types and colors blended together so that the consumer can purchase a product with a uniform flavor and color.
- True** All carbohydrates except monosaccharides, such as glucose and fructose, the primary sugars of honey must be digested into their simple sugar components before they can be used by the human body. These simple sugars are absorbed into the blood stream from the intestine, with glucose entering the bloodstream directly, providing an instant source of energy.
- True** Even though tested recipes using honey are recommended, honey may be substituted as the sweetening agent in any recipe that calls for sugar.
- True** People with sugar diabetes cannot handle glucose. Since honey contains a high proportion of glucose, it is not recommended for diabetics.
- True** Honey yeasts will not grow at temperatures below 52°F., thus storage of honey below 50°F. will protect it from fermentation.
- False** Low moisture honeys normally granulate slower than high moisture honeys.
- False** Since honey contains 17-18 percent water, when it is substituted for sugar in recipes, reduce the total amount of other liquids by 1/4 cup per cup of honey used.
- True** Honey is acidic in nature and when it is desirable to have it

neutralized for cooking purposes, use 1/2 teaspoon of baking soda per cup of honey used.

- False** The best time to remove excess moisture from honey is while it is still in the comb prior to extraction. Moisture readily passes through the wax cappings if the combs are placed in a warm room with a low humidity. After honey is extracted and exposed to the same warm, low humid conditions, it loses moisture more slowly because of the formation of a relatively dry surface "skin".
- A) 1380 calories
- D) 12 pounds
- C) 25°F
- Using honey in the baking industry gives the final product a desirable moist texture and improved keeping qualities.
- Honey is heated to dissolve any sugar crystals that have been incorporated during the extraction process for the purpose of delaying granulation and to kill the yeast cells that are present that cause fermentation.
- Straining honey with cheese cloth is undesirable since it adds lint to the honey.
- During the fermentation process the yeast cells develop on the sugars in honey producing alcohol and carbon dioxide. The carbon dioxide may cause the containers to burst and the honey to foam during heating.
- During the filtering process used by commercial packers, all particulate matter is removed from the honey. Granulation cannot take place in honey unless it contains some type of particulate matter on which the crystals can grow.

### ANSWERS TO EXTRA CREDIT QUESTIONS

- In 1959 researchers in Japan discovered a method for converting a portion of the glucose in corn syrup into fructose using the bacterial enzyme known as glucose isomerase. The new product was called isomerase or isomerized syrup and had a fructose-glucose ratio similar to that found in honey and was relatively inexpensive to produce. For several years it was impossible to detect the presence of isomerase in honey, thus it was a serious problem until chemical tests were developed to detect the adulterated honey.
- Acidity.** Honey is an acid medium with an average pH of 3.9. This degree of acidity will prevent the establishment or growth of many bacterial species. **Osmotic pressure** Honey normally contains less than 18.6 percent water and will readily absorb moisture from the atmosphere surrounding it or from any microscopic organism that enters the honey. **Glucose-oxidase system.** A small portion of the glucose in honey is attacked by the enzyme glucose oxidase and converted into gluconic acid and hydrogen peroxide. The hydrogen peroxide acts like a disinfectant and protects diluted honey against attack by molds, fungi and bacteria.

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

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

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# At Least We Know Where We Have Been

By DR. JAMES TEW • The Agricultural Technical Institute • Wooster, OH 44691

*"What an exciting time to be in beekeeping. For years it has been predictable. Now, it is challenging. Decisions made now will have historical significance."*

**W**hen I came to the Ohio State University more than nine years ago, beekeeping was in the Organic Food heyday. One knew what to expect from the beekeeping industry. Things were stable and in place. Far, if ever, in coming were distant warnings of some kind of aggressive bee that would cause serious disruption to the local industry. But not to worry — that problem was in some distant country. If the problem ever became ours, we would deal with it. Other warnings occurring concomitantly were dire predictions of species of predaceous mites that could completely destroy a colony in a few years — but that was to be expected of some of those distant countries that were noted for such strange pests. Some of these mites were even microscopic and would plug the respiratory system of the bee. How could this be a problem for us? Did we not have someone, somewhere who was constantly checking for such unwanted introductions? Surely we must have. Other parts of the world began to grow technologically. U. S. industries began to be challenged on many production fronts, including beekeeping. Again, not to worry. We, as beekeepers, were participants in a stable, well developed industry and from that position, we would develop coping mechanisms. Well, it's time. Most of the predicted problems are here — or soon will be. What do we do now?

I recently went to a Wooster bank for routine purposes. On the wall was an enlargement of one of the tin-type pictures that was made in downtown Wooster, OH, my home town. The Civil War Monument was in place. Across the street was the court house with all its facades just as

they are today. All the buildings were where they should be and yet, everything was different. The year was 1898, the same year my Grandfather was born. Horses and carriages were visible everywhere. Clothing styles were "old fashioned". That photo was a window in time. It clearly showed a "stopped frame" of life on that particular day. As I stood gazing at the picture, I was struck by the loud silence that emanated from the scene. What were the problems of the day — bacterial infections, tooth decay, pneumonia? What were people's concerns ninety years ago? Am I somewhere in a photo that someone will gaze at ninety years from now and wonder what our challenges were?

*Gleanings in Bee Culture* is 115 years old this year. Think of all the beekeepers who have contributed the hundreds (thousands?) of articles to it over these years. Think of the days when American Foulbrood was the major concern; the days when beekeepers could not decide on the best type of equipment; when the package and queen industry was just developing and electrically powered extractors did not exist. In many respects, we have things very good now. I hope future beekeepers will have things even better.

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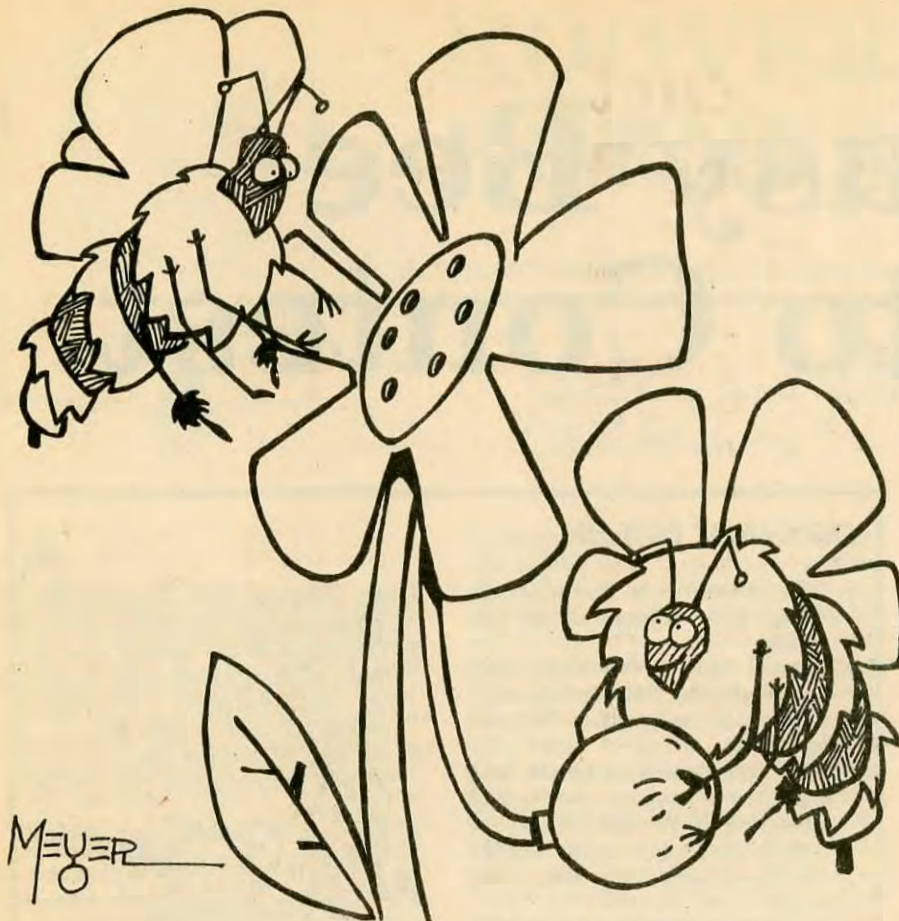
How will future beekeepers view our generation? For that matter, how would past generations view our management of the bee industry? We are operating in an epoch of beekeeping change. I had not realized this until recently. An older beekeeper said to me, "What an exciting time to be in beekeeping. All my beekeeping life, it was established and predictable. We went to meetings and discussed the same staid topics. Now, the topics are real and challenging. The decisions being made during this period will carry historical significance. What an exciting time to be in beekeeping!" Since we can do little about the problems anyway, I took heart from the gentleman's comments and agreed with him.

Many great authorities have gone before us. Their commitments were seemingly unswerving. No doubt they had their moments when problems seemed insurmountable, but for the greatest part, beekeeping history has glossed over the rough parts and left us with a picture of consistent advancements through research and hard work. We have the same components for advancement today. Maybe they are just harder to see. No one individual is responsible for the beekeeping industry. We work as a group. Beekeeping history will record our efforts as a group. The many writers who, in journal articles, have admonished us as beekeepers to persevere have had a common theme: Others have had problems in the past, we should expect to have ours. No matter how bleak conditions have appeared in the past, beekeeping events have usually had a positive ending. Those of us who are truly committed to the advancement of beekeeping have had and are going to have our mettle tested. History is watching. §



Judges are told to look for adulteration, and they should do so. But, in the case of wax, it is difficult to trace, unless one breaks a piece off, and puts it through various tests. It is also not difficult for an exhibitor to mix in other waxes with the beeswax when making the molten mixture prior to molding. One has to trust the integrity of exhibitors.

However, any exhibit which is hard and lifeless, or exceptionally white, or even very sticky, should be regarded critically. Possibly the best course is to put such entries on one side, and not make any marks about adulteration. Then have another very careful and thorough look at them. If in doubt, mark them down to some degree, but do not reject unless one is pretty sure that something is wrong. §



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# Busy Bee Photo Contest

Every town has one. Or two. In fact, you've probably been there, or certainly driven by — THE BUSY BEE RESTAURANT, or the HONEY BEE HIDE-AWAY MOTOR LODGE, or the BEELINE PRINT SHOP. They're everywhere. Why? Because business owners know that honey bees represent an industrious image to their customers.

But everybody has their favorite, the one that really makes the honey bee look good. You know, the one with good art and lettering — really a good looking display. It might be for a dry cleaners, or milk depot or whatever — but it looks GOOD!

Then there is the one that is really catchy. The business that uses the honey bee as a marketing technique. For instance — THE BEE LINE ARCHERY SHOP.

Finally, we've all seen those extremely, uh, how do I say this — tacky signs. You know what I mean. The kind we (as beekeepers) cringe at when we see them.

Well here's your chance to share those Good — Catchy — Tacky signs. We are looking for the very best, or worst, in each category.

We need a good black and white photo of your favorite, in one, two or all three categories.

The best 3 of each will be part of a photo essay we'll run later this year. The nine winners will win a one year subscription to *Bee Culture*. But everybody who enters wins too! Every entrant will receive 6 beekeeping postcards to send to those special friends.

So get out your cameras and find that "Perfect" sign. And send it in — you can't lose!

## CONTEST RULES

1. You can enter as many photos in as many categories as you wish.
2. Photos should be black and white prints. Color prints and slides are acceptable, but not preferred.
3. Put your name, address and category of photo on the back of EACH PHOTO ENTERED, to avoid confusion and enable judges to accurately place each entry.
4. Beekeeping business signs ARE NOT eligible (no matter how good they are!)
5. Contest closes Feb. 25, 1988. Winning photos will be published in the May, 1988 issue of *Bee Culture*.
6. All entrants will be notified and prizes awarded by April 1, 1988.
7. Decisions of the judges will be final, although there may be ties in any category. Duplicate prizes will then be awarded.
8. All photos become the property of *Bee Culture* and will not be returned.
9. Be sure to protect your photos with a layer of cardboard.
10. Send your entries to:  
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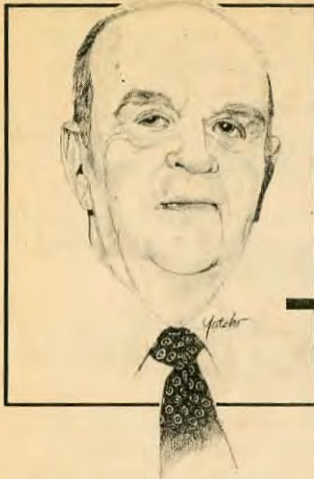
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# KOOVER'S KORNER

By CHARLES KOOVER • 1434 Punahou St. #709 • Honolulu, Hawaii 96822

*"Melting wax outside this month  
CAN be done."*

**A**n All-Year solar wax extractor seems a boastful statement. Yet it is possible. On New Years' Day when most of the Nation was watching the Tournament of Roses parade and the Rose Bowl game in Pasadena on TV, wax was melting in my solar wax extractor within a few miles of those events. I had made a discovery a few months earlier, which although I have never seen mentioned in print, no doubt is not an original one. I had been trying to melt cappings in October on a sunny day and my solar wax melter would not perform as it usually does. Suddenly it struck me that cool air was flowing over the glass and I reasoned that this was interfering with the hot rays of the sun.

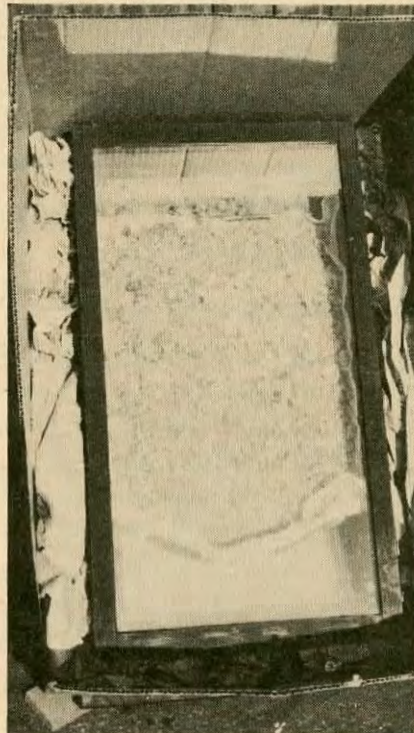
I went to the grocery where I do my shopping and asked for the largest carton in which paper goods are shipped. I put the solar wax extractor into it and filled the rest of the space with crumpled newspapers. It did the trick and in no time my wax cappings began to melt.

So you now say "Oh well, that's alright for Southern California but it won't work for me here in the colder part of the country".

Bees wax melts at between 143°F and 145°F according to Root's ABC and XYZ, and although the temperature in the shade was only 53° that New Years Day at the highest, I was able to get the thermometer on the pan in the wax extractor to climb to 197°F. So while I watched the game my solar wax melter melted all my cappings that day.

In my correspondence with

beekeepers I have been told again and again that they think melting wax cappings is a miserable job and not worth the effort. How mistaken can you be? They even told me that they burn their cappings. When I take my solar melted wax to the dealer from whom I get my bee supplies, his eyes begin to gleam and he gladly pays me a premium for my beautiful cakes of wax. Since then I discovered that saddle makers and leather goods makers will pay a dollar a pound for my wax. That was 15 years ago. Their suppliers sell them small cakes of wax that fit into the cups through which their sewing threads are drawn when they do their stitching.



*Solar wax melter with melting cappings seen from above into surrounding cardboard box.*

It's dirty stuff, a mixture of wax and paraffin full of dross. They hate it because the paraffin rots the stitching, they tell me. No wonder they were glad to buy my wax.

And then I learned something else. You don't need a piece of glass above the melting cappings. I wrote an article about that and the accompanying pictures showed how I was melting wax cappings in a deep galvanized metal pan and the melted wax was running out of the spout into a container. The secret is a protected spot like in front of a wall where the air gets hot.

And the best of it all is you don't have to spend a cent for a solar wax melter. Times are hard and money is scarce so here is what you do. As I mentioned, first get a large cardboard box from your grocer. Next, if you have one, talk your wife into letting you have for half a day the vegetable crisper pan in the bottom of your refrigerator and one rack. Put the vegetables in plastic bags temporarily. Now then, put the pan into the big carton and pack it all around with crumpled newspapers. Take the contraption outside in your sheltered spot and put the tray of your refrigerator on top of the pan. Get a large, sleezy-thin rag to fit on top of the tray. Angle your box against the wall in such a way that the sun can shine right into the box. You will have to change the angle a few times during the time it takes to melt the wax. Melting can be done on a weekend on a bright day while you are watching a game on TV. I said enough — you do the rest.

P.S. Be sure and do a good job cleaning that pan and tray or your wife will never let you use it again!§



Wooster, OH, at the Agricultural Technical Institute, commonly referred to as A. T. I. He teaches courses on beekeeping to associate degree students, holds numerous workshops during the summer, writes for Journals and Newsletters, is on the Board of Directors of several National Beekeeping Groups, and is probably involved in more projects than I have room for here. He is an energetic and ambitious representative of our industry.

While singing his praises, I'll mention just a few more. He is a skilled researcher, although he has neither time nor funding for much along those lines. He is also a good beekeeper, but again, time and other duties have reduced that activity to a minimum. He is fortunate to have, (may I say it?) an even better beekeeper working with him at A. T. I., who manages to make him look good though. Phil Mariola is certainly an unsung hero.

Dr. Tew is also an excellent writer, whose skills range from philosophical to concrete science, with much wisdom and humor inbetween. He has entertained and educated thousands of us with his columns and stories.

In short, I believe him to be well qualified for his new job.

When I was working for Extension in Wisconsin, my boss had this credo on the wall in his office.

"The Role of the Extension Agent is to Get the Most Information Available, to the Largest Number of People Possible, on the Smallest Budget Imaginable."

Under this he had taped up this neatly typed phrase, "And never Forget, Every Year There is more Information, More People, and Even Less Money."

That was nearly 20 years ago — and the plight of Extension certainly has not changed.

I bring this up because Dr. Tew's new position will have to deal with all of these restraints. And one that wasn't mentioned — the mission of this position. I'm not going to steal his thunder here, as we do have an interview planned where he will go into some detail on all aspects of his job. But I do know, and want to emphasize, that this position will not be all things to all people. Much as the President of The United States is not the person to contact when you want a stop sign placed on your street, the National Extension Agent is not the person to call when you can't find the queen you just released and want to know why.

As most Extension agents are aware, there are only 30 hours in a day. So, for the time being, let's let Dr. Tew do his job — get his feet wet with it in fact. I know he'll let us know just what it is he is supposed to be doing — and then we can take him to task.

Based on absolutely no data whatsoever, I'm going to make some New Years Predictions. While I don't suppose these will end up on the cover of one of those sensational tabloids you see at super market check-out counters, one year from now we'll take a look at these wild guesses and see what happens.

- A chemical treatment for varroa will be released for use by package and queen producers.
- A chemical treatment for tracheal mites will become available, and be used regularly by beekeepers.

• Africanized bees will not cross the Texas border — naturally. (I don't include man-assisted movement).

• A democratic President, and Congress, will still not be able to agree on an import protection program.

• I will win the Ohio Lottery, and retire in splendor to a small island in the South Pacific.

I think that's sticking my neck out far enough for now. Meanwhile, have a Happy New Year.

**Don't Forget!** Contact your Congressional Representative and Senator voicing your support, and urging their support, regarding the Honey Bee becoming the National Insect. That is HJR 171 and SJR180. More than ever we need this positive recognition and the Entomological Society is certainly going to put a bug in Congresses ear once they get their act together. It's not too late, but time is running out — Write Today!§

#### FOR THE RECORD . . .

*Gleanings* continually seeks accuracy in our publication. We recognize that errors do occur and use this space to correct them when discovered by staff or readers. Mistakes may occur in writing, editing or mechanical reproduction of the magazine. It is our policy to correct these mistakes. We encourage questions or comments from readers. Call (216) 725-6677 during business hours or write us at the address on the editorial page of this magazine.

## BEEKEEPER TECHNICIAN

January 4 to November 18, 1988

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# The American Beekeeping Federation and the Hobbyist Beekeeper

By ALAN L. KING

As time runs short for beekeepers to take advantage of the free belt buckle offer for joining the American Beekeeping Federation, I would like to address the oft asked question: Why would a hobbyist beekeeper want to be an ABF member?

What constitutes a hobbyist, or non-commercial beekeeper? For our purposes let's consider those with a hundred or fewer colonies. The above question is one that I began to answer for myself when I first joined the ABF as a beekeeper with about 18 colonies. The small beekeeper must assess their role in the beekeeping industry and just what they expect to gain from beekeeping. It is unfortunate that so many of these smaller beekeepers regard themselves as insignificant in the overall picture of American beekeeping. Actually, several factors indicate just the opposite is true.

First, sheer numbers suggest that hobbyist beekeepers are a major force in American beekeeping. The USDA estimates that about 210,000 of the 220,000 beekeepers here operate fewer than 30 colonies — certainly a majority. Secondly, small beekeepers hold many positions of leadership within local, state and national beekeeping organizations. The nine member executive committee of the ABF has 2 such members. Thirdly, though it may seem ironic, many of our industry's most active promoters are small beekeepers — those who work at fairs, festivals and who work regularly with the media, and who help make honey queen programs so successful.

Once a smaller operator realizes he is part of an important segment of our industry, and a natural candidate for ABF membership, then the next step is to find out what benefits are offered. Of course there is our bi-monthly newsletter which usually includes a special feature for smaller beekeepers. Federation members have special liability insurance coverage available to them through Insurance Protectors. Each January there is the opportunity to attend a

top-notch national convention. This is a chance to hear speakers from around the world speak on all manner of subjects pertaining to beekeeping, and to learn more about bee management, bee research, honey promotion, etc. It is a chance to make new friends and visit with old ones. It's an opportunity to look at new products and talk to bee equipment manufacturers and dealers. It's a chance to evaluate the State Honey Queens and see if your favorite is the same as the Judges. And, it's a chance to voice your opinion about the policies and direction of the ABF. And don't forget, it's a chance to compete for the silver platters in the ABF convention honey show.

When considering the benefits of ABF membership, also think about the role the organization can play in the state and the direction of our industry. The smaller beekeepers with an accurate view of his own role in the industry will recognize that to support the ABF with their dues dollars will return indirect benefits to himself because the entire industry benefits.

A great deal of the ABF's resources are expended in areas that benefit the industry as a whole. For example, the ABF has led the way in honey promotion. After spending thousands of dollars and hours of labor, we now have the National Honey Board, whose chief objective is to turn our assessment dollars into increased demand for honey.

The American Honey Queen Program is a long-standing, highly effective promotional endeavor too. This program has grown and improved steadily over the years under very capable leadership. Everyone in the industry can be proud of the promotional representatives that we have in our American Honey Queen and Princess.

Besides promoting honey, the ABF also promotes beekeeping through the 4-H beekeeping essay contest, which we sponsor yearly. In this way, beekeeping and youngsters

are brought together to initiate or reinforce a wonderful pursuit.

Many outside the ABF believe that we are strictly a group of commercial beekeepers, but that is hardly so. More than half of our membership is in the non-commercial area. There are hundreds of small beekeepers like you and I who help make up the 2000+ membership roll. Some claim that the Federation's activities yield a greater benefit for the larger beekeeper and quite simply, the indirect benefits you derive as a beekeeper from your ABF membership will be commensurate with the size of your beekeeping operation. That's why our dues structure provides for levels that correlate to the size of your operation. A commercial operator is currently required to pay a minimum of \$75/year, while a hobbyist is currently required to pay the minimum dues of only \$15/year.

In order to receive a free special edition belt buckle you must join before the deadline of January 31, 1988. This date has been extended from Dec. 31 to coordinate with the publication of this article and to give you a last chance to take advantage of our remaining stock of belt buckles.

Should there be an increase in dues resulting from action taken by the membership at the annual business meeting this month, your payment will be prorated accordingly. For joining now as a hobbyist member at \$15, your buckle will be antique bronze plated; for joining now at the commercial level at \$75, your buckle will be gold and silver plated.

Larry Tutterow, ABF membership chairman for the state of Indiana often speaks of the difference between beekeepers and bee-havers. The latter is an individual who simply has bees, but neglects them continually. Obviously, Bee-Haver is not a nice name tag to wear. JoAnne Weber, Chairperson for the state of Wisconsin, recently expanded Larry's

*Continued on Next Page*



bee-haver qualifications to include people who are part of the beekeeping industry, but who do not support the well-being of the industry in any way, such as ABF membership. In many ways beekeeping is a very rewarding pursuit, and most beekeepers are proud of that pursuit. If you have pride in the beekeeping industry you can demonstrate it by joining the ABF and by wearing your new ABF belt buckle. Simply send a check for your dues to: ABF, Inc., 13637 N. W. 39th Ave., Gainesville, FL 32606. Ph. 904-332-0012. Your belt buckle will be on its way!§



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## AMERICAN BEEKEEPING FEDERATION 1988 Convention Schedule and Program January 22 - 27, 1988

### Friday, Jan. 22, 1988

- 8:00 Hybri-Bee Meeting
- 8:00 - Noon ABF Executive Committee
- 9:00 - 5:00 Exhibits and Honey Show set-up
- 10:00 Registration Desk Opens
- 1:00 - 5:00 ABF Board of Directors

### Saturday, Jan. 23, 1988

- 7:30 ABF Membership Breakfast
- 8:30 - 5:00 Registration
- 10:00 Opening Ceremonies  
Call to order; Presentation of colors; Invocation; Welcome; Response; President's Address
- 11:00 Keynote Address: Rep. E. (Kika) de la Garza, Chm. House Committee for Agriculture
- 12:15 Luncheon for Chm. de la Garza
- 2:00 - 3:15 National Honey Board Report: Harry Rodenberg, Chm.; Dan Hall, Mgr.; Mary Humann, Pub. Rel. Dir.
- 3:30 - 4:00 Questions and Answers - National Honey Board
- 4:00 - 4:30 Washington News - Larry Myers (Wash. DC)
- 4:30 - 5:00 Honey Loan Program: Jane Phillips (ASCS/USDA)
- 7:30 Honey Queen Reception and Auctions

### Sunday, Jan. 24, 1988

- 9:00 - 5:00 Bus Tour and Barbeque Lunch to the Weaver Families' Apiaries (Howard Weaver & Sons and Weaver Apiaries, Inc.) in Navasota, TX. Exhibits and Honey Show Open (Optional)

### Monday, Jan. 25, 1988

- 7:30 ABBA & CBBA Breakfast Meeting; National Honey Packers & Dealers Directors Breakfast
- 8:30 - 5:00 Registration Desk Open
- 9:00 - 10:00 Panel Discussion *Tracheal Mite Control*; Dr. Bill Wilson (ARS) Chemical Controls. Darrell Wenner (CA) Pro-Regulatory Cont.; Bob Brandt (CA) Anti-Regulatory Cont.
- 9:30 Ladies Auxiliary Business Meeting and Program
- 11:30 Ladies Auxiliary Luncheon
- 10:30 - 11:30 Panel Discussion *African Bees*. Mexican Control Program, Wm. Helms, Dept. Admin. APHIS; Dr. Ralph Bram, Nat'l. Prog. Staff ARS; Ongoing Research Needs, Dr. G. Loper, ARS/USDA; A Tropical Pest Only, Bill VanderPut (TX)
- 11:30 Reading of the Resolutions, V.P. Reg Wilbanks
- 1:30 - 2:30 Panel Discussion on *New Technologies*; Jim Kuehl (NE), Honey Dryers; Donald Gunness (ND), Uncappers; Jim Paysen (SD), Other New Technologies
- 3:00 National Honey Packers & Dealers Meeting. General Membership and their guests.
- 3:00 - 4:00 Panel Discussion *Bees of the Future*. Mel Greenleaf (FL), Sue Cobey (CA) and Dr. John Harbo (ARS/USDA)
- 4:00 - 5:30 Panel Discussion on *Varroa Mites*; Dr. H. Shimanuki (ARS), Dr. Harvey Cromroy (FL); and Prof. Dr. W. Ritter (FRG)
- 5:30 Honey Show Auction

### Tuesday, Jan. 26, 1988

- 7:30 Honey Industrial Council Committee Breakfast
- 9:00 - 12:00 Registration Desk Open
- 9:00 - 9:45 What the Packer Wants from the Producer. Don Schmidt (SD); T. E. Burleson (TX)
- 9:45 - 10:30 Group Discussions
- 10:45 - 11:15 Adulterants in Honey, Dr. J. W. White (TX)
- 11:15 - 12:00 Urbanization Problems for Honey Producers and Packers, Phil May (IL) and Bill Gamber (PA)
- 12:00 Noon Adjourn
- 1:30 - 5:00 Annual Business Meeting; National Honey Packers & Dealers Dir. Mtg.
- 6:30 - 7:30 Social Hour
- 7:30 Annual Banquet and Coronation Ball

For Additional Information and Registration Material Contact:

American Beekeeping Federation  
13637 N. W. 39th Avenue  
Gainesville, FL 32606  
(904) 332-0012





# News . . .

## Honey Bee Genetics Holds Classes

Steve Taber is again offering 2 classes this summer.

• July 16, 17 and 18 will be on Intermediate Beekeeping, including location and ID of parasitic mites, bee diseases, queen manipulation and basic bee genetics. Included are field trips and guest lectures. Cost is \$200.00 with a limit of 35 participants.

• On July 21, 22, 23 and 24 a course on Artificial Insemination will be offered. This will include semen collection and injection, care of virgins and drones. Evening lectures will cover bee genetics and various breeding programs. Cost of this course is \$300.00 with a limit of 16 participants.

Noon meals and a banquet are included in both classes. Speakers include Steve Taber, Tom Parisian and other experts in the field of beekeeping and AI. For more information contact Honey Bee Genetics, P. O. Box 1672, Vacaville, CA 95696. (707) 449-0440.

Participants from developing countries will be assessed \$150.00 and \$250.00 respectively, for these classes. Cost for meals for an accompanying person who is not a participant is \$35.00.

## CANADIANS CONCERNED

Canadian honey producers are up in arms over everything from low prices, a federal ban on U.S. bee imports and federal restrictions on honey exports.

Many fear they will be put out of business by the ban on the importation of U.S. bees in an attempt to stop the introduction of the varroa mite.

And they say the same thing will happen if producers and governments don't act quickly to support prices.

At the annual meeting of the Alberta Beekeepers Association recently members outlined their concerns about the future of the C\$14.6 million dollar a year industry.

Dom Torok of Elk Point said he knows of 15,000 hives that are being abandoned by their owners this winter. "We are at the point where the Canadian honey industry in one year will be decimated; two more years and most of us here today won't be in this industry."

Torok said beekeepers are paid some 35 cents a pound for honey which costs 55 cents a pound to produce — not counting long-term debt. He suggested a fair price — perhaps supported by a government-producer stabilization plan or a marketing board.

Peace River beekeepers told the meeting that 50,000 area hives would be left idle if the ban on U.S. bees is continued past its current Dec. 31 limit. They said the U.S. bees should be allowed into Canada if they are treated for the varroa mite.

They said many beekeepers will be out of work next spring if the ban isn't lifted because they had already killed off this years bees before the ban was imposed.

About half of Alberta's 209,000 producing colonies use imported U.S. bees.

However, beekeepers who keep their bees through the

winter said they're worried about what the mite could do to their businesses if bee imports are resumed.

Association president Stan Bastura said producers need financial help from Ottawa. "The federal government came up with a whole lot of money for wheat growers because their price is down 30%. Our price is down 30 to 35% but we are ignored."

He said he knows of five Manitoba producers who have set dates for the auction of their assets and hears Saskatchewan and Alberta producers are also ready to quit.

He said prices are down from last year's 63 cents a half kilogram to around 40 or 45 cents because of the U.S. farm policy that has government-held stocks flooding the market.

To make the situation worse, Alberta suffered a bad summer this year which slashed production.

Meantime, northern Saskatchewan beekeepers recently gave away some 3,000 kilograms of honey to protest the federal regulations restricting their exports to the United States and Europe.

The government ruled that exports to the U.S. could contain traces of sodium sulfathiazole no higher than .02 parts a million. The producers say traces of the drug below one part in a million is considered safe.

The tightened restriction has cut Saskatchewan's honey markets sharply and one industry spokesman says it has threatened some producers with bankruptcy.

Tom Taylor said the regulations are unfair. He said sulfathiazole levels in the province are so low "a person with a bladder infection, for example, would have to eat 130 barrels a day to get any therapeutic effect at all."

In Ottawa, federal officials blamed U.S. officials for the action. Pat Erridge, chief product inspector for the dairy, fruit and vegetable division, said even at 0.2 parts a million, there is no guarantee U.S. officials will accept Canadian honey. "They have repeatedly told us there is no tolerance for sulfa in the U.S. That means there is zero tolerance."

He said two shipments from Saskatchewan were seized in Detroit this summer and held for five weeks. The U.S. Food and Drug Administration released it after the packer blended it with honey that showed no residue to bring the sulfa to allowable levels.

But Taylor said he thinks the federal policy is meant to appease Quebec, which has banned honey imports containing sulfa. He said Quebec's action is a ploy aimed at driving up prices there.

He questioned the federal testing methods, saying results come up high, are rarely double checked and don't match private testing figures. He said the old system of independent testing by either the seller or then buyer worked best.

Sodium sulfathiazole — which is used to kill bacteria — is one of a group of sulfa drugs that have been used in humans, livestock and bees since the 1930's.

Saskatchewan produced about 6.7 million kilograms of honey in 1984-85 and exported about 2.75 million kg — about three quarters of this to the U.S. In 1986-87 exports were down to 788,000 kg — half of which went to the U.S.

## Full Partner Introduced

As of January 1, 1988, Tom Parisian will be a full partner in HONEY BEE GENETICS, and will carry the title "Director of Marketing." Tom's experience is extensive with a Bachelor of Arts Degree in Botany from the University of California, Berkeley, and Master of Science Degree in Entomology from the University of California at Davis and 5 years of graduate work at the Bee Biology





Facility UC Davis, working with Drs. Robbin Thorp and Christine Peng. His name appears on several scientific papers. In addition to separate from HONEY BEE GENETICS he owns and operates the business CAL QUEENS FARM, operating about a thousand colonies for queen rearing, pollination and honey production. Tom is a welcome addition to the original partner, Steve Taber, who is Research Director.

## AIA Annual Conference

The Apiary Inspectors of America will be holding their Annual Conference in Baltimore, MD on January 18-21, 1988 at the Baltimore Marriott Inner Harbor Hotel. The Meeting is open to anyone who wishes to attend. For further information and to obtain pre-registration material, contact I. Barton Smith, Jr. at the Maryland Department of Agriculture, 50 Harry S. Truman Parkway, Annapolis, MD, 21401, (301) 841-5920. Hotel reservations must be made by December 18 to obtain the conference room rate of \$47.50. Call the hotel direct at (800) 228-9290.

Featured speakers include Marion Ellis, Dr. James Tew, Phil Lima, Ann Harman, Gene Killion, Dr. H. Shimanuki and a host of other experts.

## 1988 AHPA Program

The following is the schedule for the AHPA Program on January 6, 1988. For more information contact Glenn Gibson, Box 368, Minco, OK 73059, (405) 352-4126 or Richard Adee, Box 368, Bruce, South Dakota 57220, (605) 327-5621.

### Wednesday, January 6

8:00 Get Acquainted Reception; Host, New Mexico Beekeepers Association

### Thursday, January 7

8:00 Registration  
9:00 Bus Tour of Albuquerque - 1/2 day  
9:00 Call to Order, Richard Adee, Pres. AHPA

- 9:30 President's Address, Richard Adee  
10:30 Dr. H. Shimanuki, Research Leader, Beltsville, MD, A.R.S. - *Varroa Mite Research*  
11:15 Dr. Jim Tew, Federal Extension Apiarist, Wooster, OH, *How Extension Can Help the Beekeeping Industry*  
1:15 Dr. Tom Rinderer, Research Leader, Baton Rouge, LA, *The African Bee Barrier*  
2:00 Dr. Eric Erickson, Research Leader, Tucson, AZ, *An Overview of Research at the Carl Hayden Lab*  
3:15 Dr. Gerald Loper, ARS-USDA, Tucson, AZ, *Use of Radar to Document Honey Bee Flight*  
3:45 Dr. Bill Wilson, Res. Ldr., Weslaco, TX, *Research at the Weslaco Lab*  
4:30 Mr. Bob Cox, ARS - USDA, Weslaco, TX, *Using Menthol Crystals for Tracheal Mite Control*  
8:00 *A Picture Tour of Old Mexico Beekeeping*, Dr. Joe Moffett, ARS - USDA, Weslaco, TX

### Friday, January 8

- 9:00 All day tour of Old Sante Fe Town  
9:00 Frederic L. Hoff, Economic Research Service, USDA, *Economic Research Needs of Honey Industry*  
9:30 Jane Phillips, Honey Program Analysis, USDA, Washington, DC, *The Honey Loan Program*  
10:30 Dan Hall, Manager; Mary Humann and Harry Rodenberg, National Honey Board, Longmont, CO, *The National Honey Promotion Program*  
11:30 Steve Censky, Exec. Asst. Ag. Marketing Serv, Washington, DC, *Making the National Honey Promotion Program Operational*  
1:15 Resolutions  
1:30 Tim Dadant, General Manager, Dadant & Sons, Hamilton, IL, *The Role of the Bee Media in the Bee Industry*  
2:00 Kim Flottum, Editor, Bee Culture, Medina, OH, *Beekeeper Relations with the Press*  
2:30 Eugene Killion, IL Chief Apiary Inspector, *Bee Inspection at the state Level*

### Saturday, January 9

- 9:00 TBA APHIS-USDA, Washington, DC, *Regulating For the Varroa Mite*  
9:30 Dr. Joe Moffet, Weslaco, TX, *How the Hoff Report Impacts Beekeeping*  
10:30 Dr. Roger Morse, Dept. of Ent., Cornell, Ithaca, NY, *Mites and the Direction of Research in the US*  
11:00 Dr. E. W. Herbert, ARS USDA, Beltsville, MD, *Chalk Brood - It's Control*  
11:30 Glenn Gibson, Chairman, Washington Legislative Com., Minco, OK, *Washington Legislative Report*  
1:30 General Assembly Business Session  
3:30 Business Session 1988 Board of Directors  
7:00 Banquet, MC, Dr. James E. Tew,

Wooster, OH; Speaker Mel Ustad, Legislative Assistant, Senator Larry Pressler, SD

## ... & Events

### ☆ COLORADO ☆

The Pikes Peak Beekeeper Association in Colorado Springs, CO will hold a class on the gentle art of beekeeping at the Bear Creek Nature Center in Colorado Springs, CO on Saturday, Jan. 30 and Sunday afternoon Jan 31, 1988. Contact Bear Creek Nature Center, 245 Bear Creek Road, Colorado Springs, CO. 80906 (303) 520-6387. Cost is \$15.

The Pikes Peak Beekeeper Association will meet Thursday, January 28, 1988 at 7:00 p.m. in the Sirloin Room at Penrose Stadium in Colorado Springs, Colorado. Interested beekeepers are welcome. For more information contact Dave Easley, (303) 495-2715.

### ☆ KANSAS ☆



Miss Laura Miles, daughter of Larry and Ann Miles of Meriden, KS, was crowned the 1988 Kansas Honey Queen at the fall meeting of the Kansas Honey Producers Association. The meeting was held on October 9 and 10, 1987 in McPherson, Kansas.

Each contestant was required to write a 300 word essay on HONEY and presented it to persons attending the meeting as part of their judging. Contestants were also judged on poise, personality, congeniality, photogenic quality, ability to communicate, and a personal interview with a panel of judges.



Throughout the year of 1988 Miss Miles will travel throughout the State of Kansas and parts of Missouri promoting honey and the beekeeping industry.

The Kansas Honey Queen is sponsored by the Kansas Honey Producers Association and the honey queen is the primary promoter of the honey and beekeeping industry for the State of Kansas.

In January of 1989 Miss Miles will be eligible to compete in the American Honey Queen Contest scheduled to be held in Nashville, TN.

## ★ MICHIGAN ★



19 year old Dawn Renee Balkain, Davisburg, is the 1987 Michigan Honey Queen. Chosen at the March meeting, Dawn has been promoting honey and beekeeping statewide since. She is currently employed at H.M.H.F. Travel as a promotion Rep., and will be representing MI at the 1988 American Beekeeping Federation in Houston. She is the daughter of Mr. and Mrs. David Balkain, Davisburg.

Michigan State University will hold a Beekeeping ANR Week on March 22-23, 1988, East Lansing, Michigan.

### Tuesday, March 22

#### Kellogg Center Auditorium

- 9:30 Visit and get acquainted
- 10:00 Movie: Sexual Encounters of the Floral Kind
- 11:00 "Learn the Natural Behavior of Bees Before Trying to Manage Them", Dr. Roger Hoopingartner, Dept. of Entom, MSU
- 12:00 Luncheon, Michigan Beekeepers Association, and Michigan Wildflower Group, Big 10 Room
- 2:00 "Everything You Wish You Didn't Have to Know About Varroa Mites", Dr. Malcolm T. Sanford, University of Florida, Gainesville, Florida

- 2:45 Break
- 3:00 "Honey Promotion, National, State and Local"
- 3:45 Questions and Answers
- Evening Program**
- Kellogg Center Auditorium**
- 7:30 Honey Queen Pageant
  - Beekeeper-of-the-Year Award, presented by Richard Hubbard, Hubbard Apiaries, Onsted, MI
  - Gadget Round-Up, Dr. George Ayers, Dept. Entomology, M.S.U. (Bring your favorite gadget for others to see)
  - Reception Following

### Wednesday, March 23

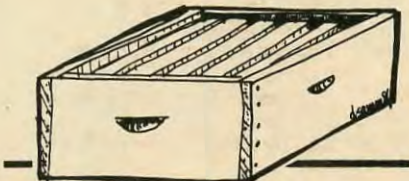
#### Kellogg Center Auditorium

- 9:30 Visit and Get Acquainted
- 10:00 Movie: Queen Rearing
- 10:30 "Populations of Bees and Foragers", Walter Boylan-Pett, Dept. of Entom., Michigan State University, East Lansing
- 11:15 "Two Queen Colony Management; and What Effect It Has On Honey Production", Roger Hoopingartner & Beekeeper Panel of Experts.
- 12:00 Lunch on your own
- 1:30 "Florida Beekeeping; Queen Breeding, Packages and Changes in the Industry", Dr. M. T. Sanford, Dept. of Entom., Univ. of Florida, Gainesville, FL
- 2:15 Break
- 2:45 "Rearing and Mating Queen Honey Bees", Dr. Roger Hoopingartner, Dept. of Entom., Michigan State University, East Lansing
- 3:30 Questions and Answers

## ★ NEW MEXICO ★

**AHP MEET IN ALBUQUERQUE.** The American Honey Producers Association is holding its annual convention in the "Duke City" for the third time in 14 years.

Visitors to Albuquerque in early January (the AHPA meeting is slated for Jan. 6-9) can usually expect bright, sunny days followed by brisk, cold nights. Snowstorms occasionally blanket the city, but the southern sun commonly melts the snow in a day or two. Recreational opportunities abound as some of the nation's best skiing is located as close as 40 minutes away. This is in addition to golf courses, tennis courts, running and biking trails and fishing lakes. Unique shopping and cultural activities are also a highlight of the Duke. Its blend of Indian, Hispanic and Anglo-American cultures provides unparalleled diversity in art,



crafts, theater and fine dining.

And for those who have time to explore this part of New Mexico, everything from Indian pueblos to ghost towns to chic alpine resorts and high-tech research laboratories are available to tour. A full-day tour to Santa Fe, another cultural mecca, will be offered during the convention for those who wish to see such sights as America's oldest house, its oldest church and oldest governor's palace. Travel and tour brochures will be available at the convention.

This year's convention promises to be one of the most challenging and productive yet. But it also promises to be an unforgettably fun meeting. Make plans to attend now.

## ★ OHIO ★

For the past few years, the Agricultural Technical Institute of the Ohio State University has offered summer short courses. These courses are actually compacted regular classes, they are intensive and comprehensive. We realize that many beekeepers have problems finding time to attend summer programs, therefore, we are always searching for the right "mix" of course content and dates. This summer, we are trying the long weekend approach.

- On May 13, 14 and 15, 1988, we will offer introductory beekeeping. We gave this course a break during the past few years and feel that it is time to offer it again.
- On June 10, 11 and 12, 1988, we are offering a new program — Contemporary Issues in Beekeeping. On June 10, a full day of Africanized Beekeeping — the latest information. On June 11, Varroa Mites — What They Are and How Can They Be Controlled. On June 12, a discussion of Tracheal Mites during morning hours and a short discussion of Honey Marketing during early afternoon hours.
- The VIII International Beekeeping Seminar will be presented July 18-29, 1988. As in past years, this is a symposium on the International Aspects of Beekeeping. During the past years, approximately 200 participants have participated from 30 countries. We anticipate another successful year.

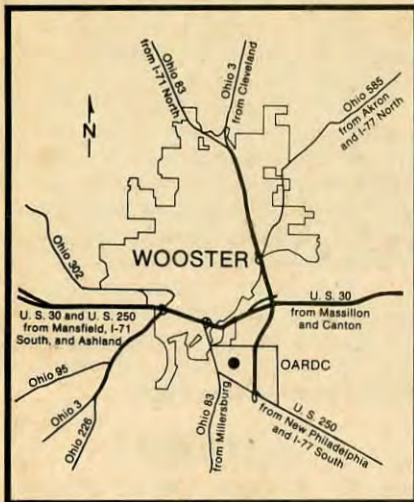
Additional information on all courses are available from: The Office of Conferences, Ms. Gail Miller, The Agricultural Technical Institute, Wooster, OH 44691. (216) 345-8336.

If we can be of any assistance, feel free to contact us.



## ☆ OBITUARIES ☆

ALL ROADS LEAD TO . . .



Wooster on March 12, 1988 at the (OARDC) Agricultural Research & Development Center for the 10th Annual Tri-County Beekeepers Association Workshop. **BIGGER AND BETTER.** More details and programming in upcoming issues of *Bee Culture*.

### MYRTON E. GRAY

Myrton E. Gray, 83, RD 1, Sagertown, died Monday, October 5, 1987, at Meadville Medical Center, Meradville, PA.

He was born at Union City, Feb. 20, 1904, a son of Archie and Sadie Edna Burroughs Gray. He married Gertrude Kimmy, Jan. 10, 1945.

Gray was a self-employed beekeeper for 65 years and at one time had an apiary of 700 colonies. He was owner and operator of the Gray Apiary Farm and had been a state beekeeper inspector. He had won awards at the State Farm Show and was inducted into the Crawford County Hall of Fame last year in recognition of his apiary work by the Crawford County Farm Council. He was the first chairman of the apiary department of the Crawford County Fair, a position he held for 39 years. At one time, he was president of the State Beekeepers Association and organized several beekeepers associations in the state. He was affiliated with Christ Evangelical Church of Saegertown and was a former member of the grange and Odd Fellows Lodge.

### HOMER VAN SCOY

Homer VanScoy, well-known New York State beekeeper of Candor, NY, died recently at the age of 95. Mr. VanScoy had written for the bee journals and was well-known among local beekeepers for his interest in research on bees and beekeeping. In addition to being an unusually capable beekeeper, he was an expert and fastidious carpenter who made most of his own beekeeping equipment with great attention to detail.

Mr. VanScoy contributed greatly to bee research when he saw and recognized the importance of a genetic abnormality in one of his colonies. He called this to the attention of Dr. William Cogshall at Cornell, who in turn sent the queen from the colony to Professor Walter Rothenbuhler of Ohio State University. This was the beginning of the VanScoy line which is mentioned in several of Rothenbuhler's papers on genetics and disease resistance. The VanScoy line had special attributes that were key features of the research conducted by Rothenbuhler, his graduate students and associates.

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# ☆ Classified Corner ☆

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## WANTED

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