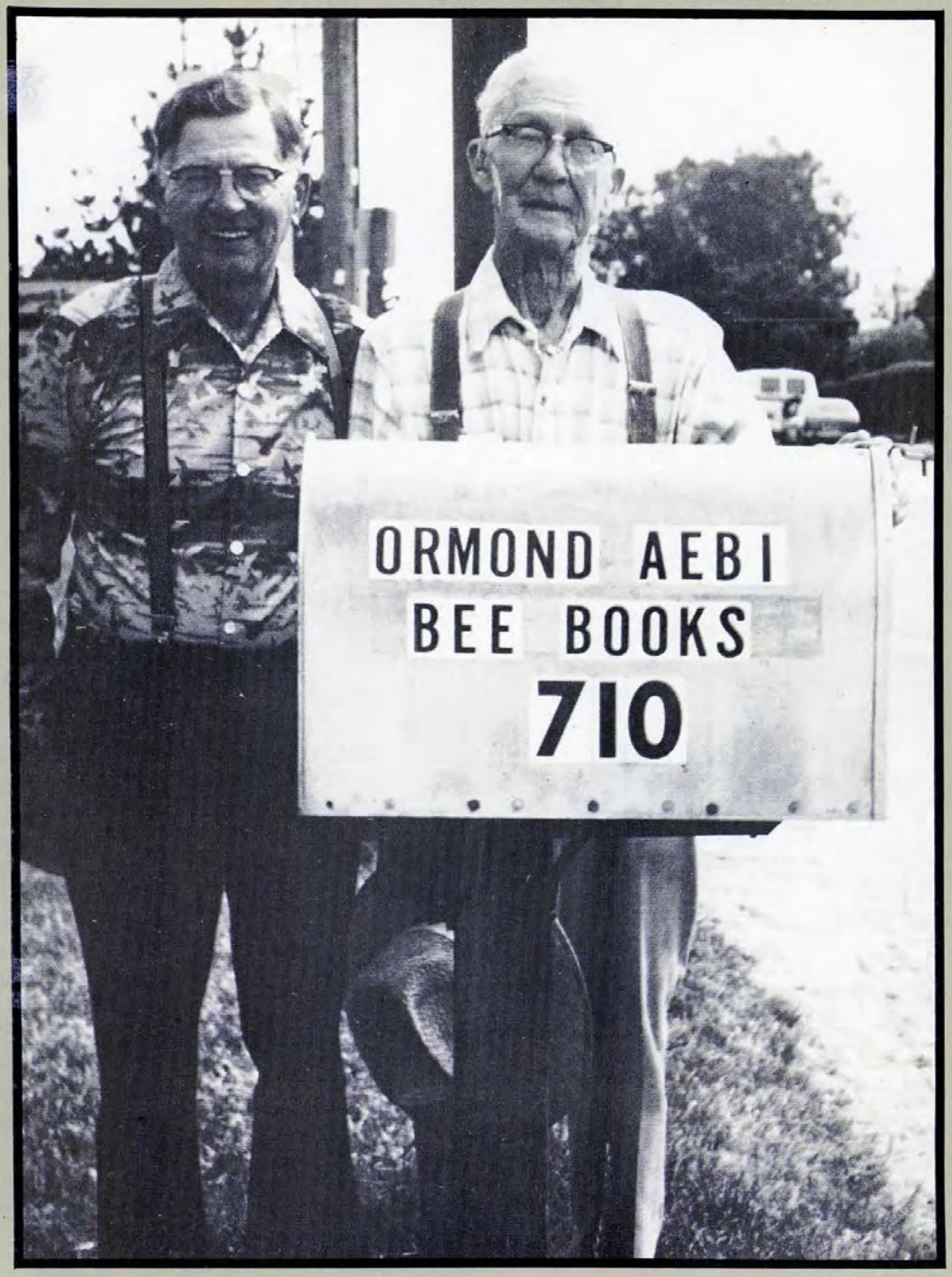
GLEANINGS IN BEE CULTURE

OCTOBER 1983



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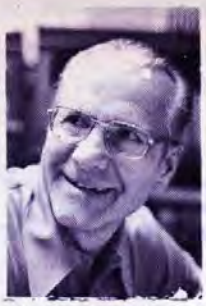
John Root



Lawrence Goltz

GLEANINGS IN BEE CULTURE

Since 1873

October 1983 *(ISSN 0017-114X)* *Vol. 111, No. 10*

Created to Help Beekeepers Succeed

111 Years Continuous Publication by the Same Organization

Mark Bruner

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Contents

Cover Story

Harry and Ormond Aebi, authors of *Art And Adventure Of Beekeeping* and *Mastering The Art Of Beekeeping, Volume II.* As harvest comes to a close, preparations for the winter season begin. For some, that means a bit of free time to catch up on reading good beekeeping books.

NOTES FROM THE BEEYARD

Thoughts About A Unified Beekeeping & Honey Industry

Anyone who has not yet attended a conference of the Eastern Apicultural Society should make plans, if at all possible, for doing so next summer when EAS convenes in Rhode Island. The 1983 Conference, held in Orono, Maine and attended by 714 beekeepers, was a testimonial to what good organization and high quality offerings can achieve. The compliments of *Gleanings* go to the many men and women who dedicated their time and talents to excellent short courses, stimulating conference presentations and an educational, entertaining program that ran smoothly throughout the week.

The success of the '83 EAS meeting is made doubly gratifying in light of the fact that our American beekeeping community has a history (and, an unfortunate current status) of being far too fragmented and disunified. Possibly, one reason for this is the underlying perception of beekeeping as a solitary activity. That this is felt to be so may, in part, be documented by the fact that only a small percentage of beekeepers join beekeeping associations; and, as an extension of that statistic: the total combined circulation of the three major domestic bee journals falls short of ¼ of the American beekeeping population. But, there is unquestionably a more basic obstacle to a unified industry. Money. And, as a consequence of operating with an objective of making money, competitiveness often results in animosities and personal conflicts between representatives of major portions of the industry. That such conflicts can impede progress is quite obvious. Finally, in this same vein, is the economic reality that what might be good for a honey producer may not be good for a honey packer — that marketing pluses for the hobbyist might constitute negatives for the commercial concerns — that legislation or other activism affects different people different ways.

None-the-less, we can all look around us and find numerous examples of how individuals, with basic common interests and shared problems, overcame their secondary differences for the sake of saving and perpetuating their industry. Apple growers, orange growers, turkey growers, cattleman are but a few of the many examples of agriculturally related industries that came, in some cases, from depths of economic depression, into a unified, successful marketing front. With few exceptions, the beekeeping industry is smaller than most. Someone recently commented that a fair sized shopping mall has higher annual sales than the combined beekeeping industry. That might be so. What we must accept is that Americans tend to be crisis managers. For example, the auto industry and the steel industry (to name but two) had years of forewarning about impending problems, but did not respond until the situation was almost out of hand. Large industries, however, have a legacy of being able to do that and get away with it. A small industry, like beekeeping, may not have such a luxury. Given that honey is not a staple item, the prospect of "sink or swim" takes on added import.

Ironically, however, hope does exist in the same factor of smallness. The very managability of the beekeeping population suggests an immediate potential for overcoming old resentments and suspicions.

Perhaps it was noticeable to others who attended EAS, that an amazing number of discussions related to precisely this theme: **unity.** Naturally, individual conceptions of how this might take organizational form differed slightly, but not substantially. Basically, they all involved these thoughts:

Is there not some way in which representatives of all segments of beekeeping: producers, packers, manufacturers, educators, press, commercial, hobbyist/sideliner, clubs and associations, could be brought together for the purpose of organizing an American Beekeeping and Honey Coalition more comprehensive and with more influence than any existing body.

Obviously, the scope of such unification is not remotely close to being defined, let alone realized, but applications for such an organization are equally obvious. 1.) as a vehicle through which marketing promotion programs can be effectively coordinated. 2.) as a means of focusing lobbying efforts to influence legislation. As this now exists, the industry is represented by a divergency of spokesmen, often voicing conflicting opinions. This fragmentation detracts from the credibility of any attempt to achieve beneficial legislation or political decisions. The conflicting opinions and positions within our industry must certainly be acknowledged. However, it seems that the only option for resolving differences and reaching healthy compromises is by providing an organization through which the arguments of all can be openly presented and freely discussed.

Is such unification possible? The examples of others prove that it is. The extent of conversation, within the beekeeping community, advocating exactly that, suggests an immediate need and desire for such a possibility. Many details remain unattended.

How would fair representation from all areas of American beekeeping be insured? What would be the extent to which an American Honey Coalition could speak for the industry at large? What would be required of existing organizations and/or individuals agreeing to participate in the formation of a coalition? How would a coalition deal with issues on which unanimous agreement could not be reached?

All such questions are, however, questions of mechanics and organizational motion — secondary, in almost all respects, to the primary philosophical and common sense reasons for pursuing some form of unification. To that end, there seems to exist one pertinent, unanswered question: **who will assume the initiative of leadership and begin the first steps toward a united beekeeping and honey industry?**□

Giving You A Hand (Lotion)

Many of you hardworking folks have noticed that, from time to time, the skin on your hands exhibits all the charming textural qualities of parched prunes, that little children make veiled references to "the reptile creature from Planet Zero X", and that dermatologists begin introducing themselves to you in inordinately large numbers.

Take a hint. Chapped, dry hands are a symptom of work, such as beekeeping, that requires manual effort in a variety of environmental conditions.

Several weeks ago, using wax that I had thoroughly mangled during early efforts to install foundation into shallow honey supers, I brewed, in my kitchen, some very passable and satisfyingly inexpensive beeswax lotion. The recipe I used, originally found in Huber Root's book on beeswax, was scaled down to the following:

5 pints of water — the closest thing to free.

3.5 ounces of beeswax — free if you've got bees.

1 heaping teaspoon borax — less than 1¢

16 ounces of mineral oil — approx. $1.50

Borax, an alkaline, serves to counterbalance the fatty acids in mineral oil. It should be dissolved in water that is then heated to 160 degrees F. The water and borax should then be poured over the beeswax and mineral oil and maintained at 160 degrees until the wax is melted. The mixture should then be allowed to cool to about 140 degrees F., at which point it can be poured off into containers. The final consistancy of the lotion is very soft but not runny — similar to the consistancy of mayonnaise. As the old saying goes: "a little bit goes a long ways." Those of you who have used wool fat salve or bag balm (lanolin base) will notice a similarity. Perfume can be added, it it's oil based, although I personally prefer the gentle natural scent of the beeswax.

The entire process took less than a ½ hour (not including cooling). As always, when working with wax, be very cautious around flames or hot burners. I slopped a small amount on my stove and thought, for a moment, I would end up like the Olympic torch. A box of salt or small fire extinguisher is best kept close at hand if work is not done in a safe, double-boiler method.

All of us, at one time or another, need to give our hands a helping hand. The next time your skin looks like retread tractor tires, why not give this beeswax hand lotion a try? □

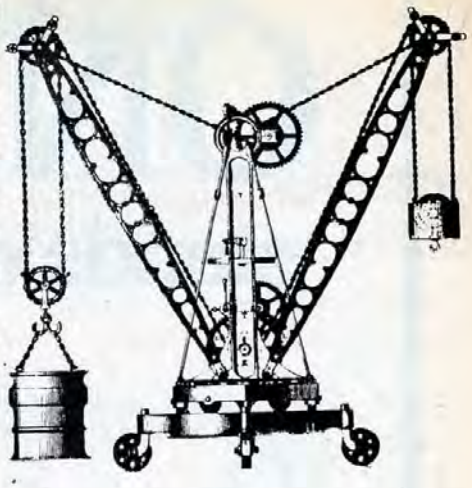
Mark Bruner
Medina, Ohio

WE HAVE A WINNER!

Congratulations to Bill Abplanalp of Edinboro, PA. Bill won the free *Gleanings* subscription drawn from names compiled at the EAS exhibit.

Gadget Contest

It seems like every beekeeper has a gadget, of some sort, that save time and money. We want to provide a way of sharing such things. We'll pay $10 for each description accepted into our new GADGET section, beginning in November, 1983. Here's what we need: a description of your gadget (no more than 100 words please) — how it's made and how it works, plus a photo or finished sketch of the gadget. Emphasis should be on simplicity. We want to see things that are original, inexpensive to build, easy to use, and helpful in beekeeping management. Carefully choose the gadget you want to submit — obviously, we won't be able to publish everything sent in. Gadgets must be unpatented. If you want material returned, enclose a self-addressed, stamped envelope. Mail to Gadgets, c/o *Gleanings,* Box 706, Medina, Ohio 44258.



Management Tips Contest

Beginning in November, 1983, *Gleanings* will publish several readers' management tips per month. We have done this, up until now, as an editorial service, but want to extend the opportunity to everyone. As a bonus for those whose tips are selected, we'll pay $5 per item. Tips should be no more than 100 words in length and must emphasize practical management ideas. We're looking for innovative ways to save time and still be effective in manipulating and tending to bees. Tips should involve the use of no equipment other than that owned by the average hobbyist beekeepers. Material will not be returned unless accompanied by a self-addressed, stamped envelope.

Mail to: TIPS c/o *Gleanings,* Box 706, Medina, Ohio 44258.

Honey Marketing Contest

We feel that one of the best ways to help the beekeeping industry is to promote more sales of honey. Therefore, beginning in November, 1983, we will begin a small monthly section featuring reader contributed ideas for successfully marketing honey. We will pay $8 per idea. Items should be no more than 100 words in length and should emphasize unusual, imaginative ways that the small producer can call public attention to the honey he or she has for sale. Photos are welcome as accompanyment to the descriptions of marketing techniques. **How do you sell your honey?** If you think you do something better or differently than others, let us know. Enclose a self-addressed, stamped envelope if you want your material returned. Mail to: **HONEY MARKETING, c/o** *Gleanings,* Box 706, Medina, Ohio 44258.

Coming In Future Issues Of GBC:

Gleanings' Interviews with:

Jacob Matthenius, Jr., New Jersey State Apiarist

Alfonse Avitabile, author of *The Beekeeper's Handbook*

Richard (Tim) May, keeper of one of this country's most unusual apiaries

Karl Showler, Administrative and technical officer at the International Bee Research Association, London, England

PLUS

"Super Bees," the Amazing Antibiotic Qualities Of Honey, How To Save Time Assembling Frames, and many more helpful, entertaining articles. All in addition to our monthly columns. Read on! **We work well together!**

Monthly HONEY Report

LAWRENCE GOLTZ

August 10, 1983

The following figures represent the current prices reported by beekeepers and packers over the country. 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	9
60 lbs. (per can) White	40.00	33.00	34.80		36.00	38.00	42.00	35.00	33.60
60 lbs. (per can) Amber	40.00	27.00	31.80		34.00	35.80	40.00	33.00	31.20
55 gal. drum (per lb.) White			.58	.58	.56			.57	.58
55 gal. drum (per lb.) Amber			.53		.53			.57	.58
Case lots — Wholesale									
1 lb. jar (case of 24)	28.50	24.90	25.80	25.90	26.40	24.50	26.40	23.00	28.00
2 lb. jar (case of 12)	27.50	23.30	24.20	23.75	24.50	23.50	24.00	24.00	
5 lb. jar (case of 6)	30.00	27.80	26.25	25.00	27.00	26.75	28.50		27.45
Retail Honey Prices									
½ lb.	.90		.90	.83	.90	.90	.90	.89	.90
12 oz. Squeeze Bottle	1.50	1.19	1.50	1.17	1.29	1.35	1.30	1.33	1.25
1 lb.	1.50	1.39	1.50	1.43	1.49	1.55	1.40	1.59	1.45
2 lb.	2.70	2.59	2.85	2.59	2.49	2.60	3.25	2.79	
2½ lb.	3.50				3.09	3.25		3.15	
3 lb.	4.00				3.49	3.85	4.50	4.29	3.59
4 lb.	5.00	4.95		4.99	4.49	4.90		5.29	
5 lb.	6.00		6.25		5.69	5.80	5.75	5.99	5.50
1 lb. Creamed			1.55		1.59			1.65	1.45
1 lb. Comb	2.00		2.25		1.99	1.85	2.25	1.99	1.75
Round Plastic Comb	1.75		1.50		1.69		1.75	1.69	1.50
Beeswax (Light)	1.25	1.10	1.30		1.25	1.50	1.25	1.25	1.20
Beeswax (Dark)	1.10	1.00	1.20		1.10	1.40	1.10	1.15	1.10
Pollination Fee (Ave. Per Colony)	25.00		27.50		18.00		22.50		25.00

Misc. Comments

Region #1

We had too much rain last spring then no rain and very hot weather for the summer. We received some good rains in mid-August and hope for a fall honeyflow. Honey sales down at both retail and wholesale. Imports are hurting small beekeepers because most don't produce enough honey to get in on the loan program. Pollination fees varied from $17.00 to $30.00. Insecticides are still a very large problem.

Region #2

Honeyflow to date below last year, but about average. Prospects at end of August are good for goldenrod flow in Pennsylvania. Honey sales slow, possibly because of hot, humid summer. A fair honey crop in West Virginia. Sufficient moisture for good fall honeyflow. Honeyflow in New York State spotty because of lack of rainfall in some areas. Honey sales slow. Dry conditions in Connecticut causing colonies to lose weight. Retail honey sales good.

Region #3

Good honey crop in northern Ohio but somewhat less in other parts of state affected by drouth. In Indiana the imported honey on market is beginning to pressure prices downward at retail level. We talk to thousands of people at our honey display at Indiana state fair, and nearly all of them are unaware that they are buying imported honey at the store. Excellent honey flow in Illinois this year, light honey with low moisture content. Southern Illinois had best crop in 30 years. Fall crop prospects dim due to severe drought. A slow, steady honey flow in Wisconsin has given a good crop. Some light honey may be produced in August.

Region #4

As of end of August, the crop is below average in quantity in southeastern Minnesota but the quality is very good from clover and basswood. Yields are less than 100 lbs. per colony and brood nests are light for winter. Honey sales fair. Much competition in retail markets. Malathion being sprayed in three western Minnesota counties for mosquito control, despite protests of beeekeepers. It was a hot and dry season in North Dakota. Promises of a good season faded with the drouth between July 25th ad August 10th. Sunflowers showed stress of heat and drought. The stress on Sunflowers caused lower nectar yields. Cool, cloudy weather over the area began on August 19th.

Region #5

Sourwood honeyflow was cut short by very dry weather in North Carolina. By late August some supers were filled, but not all capped. Good clover flow in region. Sumac at higher elevation looks promising. Despite shortcomings of season, the yields from sourwood were good, but somewhat darker than last year's crop.

Monthly HONEY Report

Region #6

Drought conditions have continued to worsen in much of Kentucky. In some areas the bees have had to be fed where the crop was removed earlier. Other areas have managed to stay up with colony demands through August. Fall honeyflow is late, and only aster looks promising. Honey sales have been disappointing in Kentucky this summer. Retail sales have been holding up well in Tennessee with little changes in prices. Large buyers of honey reluctant to buy, perhaps due to imported honey. Fall honey prospects are not promising, but beekeepers are generally pleased with this year's crop.

Region #7

Honey crops are variable in east Central Oklahoma, some colonies producing up to 60 lbs. of surplus but others barely enough for overwintering. Most production came in July and August, where as in other years the crop was made from middle of May to last of June. Receiving light showers and cooler weather at the end of August. Good honey flow in Arkansas during August. Shortage of moisture in eastern Arkansas. Very high temperatures.

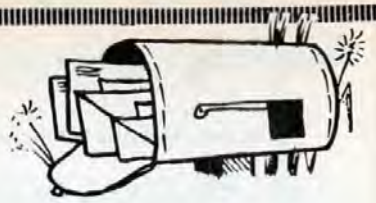
Region #8

East of mountains, in Montana, the bees did poorly in honey production. West side of state had more rain and production was better. Middle of August rains revived alfalfa, stimulating nectar flow. Honey crop less than average in Montana. some dumping out-of-state honey with off-flavor and dark color noted in drug stores at reduced prices.

Region #9

Honey crop will be spoty throughout Washington state with some areas producing good crops and other areas just making winter stores. Weather has been too cool and rainy most of the summer for the bees to work. Fireweed did not produce this year. Thistle and clover were below average in most locations. Retail sales of honey are good. Cut comb honey is selling extremely well. Rains in week of August 15-20 due to tropical storm in Baja, California, benefited honey plants in southern California giving an unexpected flow from wildflowers. Cotton honey flow in San Joaquin Valley did not materialize due to unfavorable spring cotton planting. Direct sales of honey to consumer is brisk. Bakery demand for honey is steady. □

Gleanings Mail Box



Warning About Ammonium Nitrate

Dear Editor:

At leat 30 years ago a president of Puget Sound Beekeepers Association here in Seattle wrote an article for *Gleanings* in which me mentioned the use of Ammonium Nitrate fertilizer in a smoker to put bees to sleep. The man's name was Hunsdorfen.

Probably 10 years ago, maybe a little over, I read Hunsdorfer's article and tried his idea out on an extremely bad tempered colony and the bees did in fact become unconscious — knocked out cold. Elated I used the technique perhaps a half a dozen times and then wrote up my experiences and *Gleanings* ran the article.

I suppose within a week or two I received a letter from M.J.D. Hitchcock then head of the U.S.D.A. Bee Lab at Laramie (P.O. Box 3168, Laramie, Wyoming 82071) in which he informed me that Ammonium Nitrate fertilizer should never be used in a smoker. He stated that when Ammonium Nitrate was burned two products were formed. One is Nitrous Oxide (NO_2) so called Laughing Gas which does in fact stupify the bees. The other product is Hydrogen Cyanide (HCN) a deadly gas used, for example, in gas chambers to execute criminals.

John Hitchcock said that the Hydrogen Cyanide gas is extremely hazardous to the beekeeper if inhaled and even a little of the white smoke put into a beehive will substantially shorten the life of the bees — up to 50% or more and too much will kill them outright.

When I received John Hitchcock's letter I was extremely embarrassed and got *Gleanings* to run a **Hey! NO, Don't Do It!**

I bring up this matter of the hazard of Ammonium Nitrate fertilizer because again its use surfaced in *Gleanings* for August 1983, page 415. Again I am embarassed but I don't think the "Editor's Note" is a sufficient caution. Mr. Hitchcock last I heard (this spring) is still alive and well and can be reached for verification at the Laramie Lab — or talk to your local high school chemistry teacher. I suggest if you save your back copies of *Gleanings,* you make a note on page 415 **NOT** to use Ammonium Nitrate in a smoker and briefly in the margin say why! □

P.F. Thurber

The Slatted Rack Controversy Continues

Dear Editor:

I have read with great interest the comments of the slatted rack by Victor A. Blazevic, Sterling, Virginia, and the reply by Mr. J.G. Davis, Nashville, Tennessee, who is one of my customers. Mr. Davis has used the slatted rack for several years.

If you care to check these comments they are in the May and July issues of *Gleanings.*

You will note the Mr. Davis made mention that he was using the slatted rack made by L.H. Little. In view of this I feel I should comment on my experience with this piece of equipment.

In 1975 I purchased one of the racks as sold by the Root Company and observed the actions of the bees during the summer and winter months.

On April 10th I started a colony with three pounds of bees and queen on ten frames with foundation and the result was perfect combs the same as you get in the upper brood chamber of a two story colony.

On checking the colony during flight I noticed the bees going in each corner of the hive and none in the center. This is why I added the two runners giving the bees six places to crawl up onto the combs. These runners extend almost to the bottom board. They also strengthen the rack.

Another feature of the rack is during hot weather the bees cluster inside the hive rather than on the outside.

The slatted rack prevents skunks and other varments from reaching up and tearing the corners of the combs out.

The queen will lay right down to the front corner and to the bottom bar with combs built in the brood chamber which is not the case when the slatted rack is not used. Very poor combs are drawn in the brood chamber.

I feel the slatted rack is a must for the beginner or anyone starting a new colony. I use it on all my colonies and regardless of what anyone says it is one the best pieces of equipment that has been invented in the last 50 years.

As you know I have been keeping bees for better than 60 years and before I recomend any piece of equipment to the beekeeper I try it to see if the claims made for it is true. I have found the slatted rack to be even more than the claims made for it.

The value of a colony is the combs inside and this can hardly be accomplished by the beginner beekeeper without the slatted rack.

I trust my comments will not offend Mr. Blazevic. I feel he has not tested the slatted rack as I have.

You may use this if you wish and I feel more needs to be said about it in your catalog. Pointing out the true value of the slatted rack.

L.H. Little
831½ Union St.
Shelbyville, TN 37160

Solar Beekeeping

Dear Editor:

In keeping with your excellent, "Notes From The Beeyard" column I think Herman's letter and my reply would make a contribution to beekeeping.

M.N. Herman, Wisconsin, is to be congratulated for building a hive to test Solar Beekeeping principles. Even minor deviations from bee instinct cause predictable reactions by the colony, such as building comb below the brood frames in the spring when early flows materialize. Dr. C.C. Miller and Eugene Killion used the slatted rack to control swarming. Solar Beekeeping combines the winter brood nest and summer swarming problem in a year around hive—but timing, the change of the reversible "drawer" is important. It has to be done after the winter season but before any spring honey flows.

Laws of heating and ventilating work the year around in a beehive as well as in a home. It is natural for the bees to move up when brood rearing commences. The question of condensation vanishes when it is realized that moisture (water vapor gas) is in suspension in the air in rising bubbles which float up to the inner cover through the cooler dense air. If these bubbles of moisture are allowed to vent

Continued on page 513

Gleanings Mail Box

Continued from page 512

themselves through the $^3/_8$" outlets in each corner of the top cover condensation is prevented.

The third question raises the importance of working with bee instinct. The value of a dry hive to colony health cannot be over estimated. Further, the colony will thrive in a cold dry hive, no matter how cold, but will be afflicted by nosema-dysentery in a packed unventilated hive. The Solar Unit assures the colony of voiding flights in winter months. Prevention, rather than cure is the practical approach to colony health.□

Merritt I. Taylor
8220 Brookfield Road
Richmond, Virginia

In Hot Water — Did We Wax Too Hot— In Hot Water?

Dear Editor:

In your article regarding rendering wax on page 395, column three, August issue, you say under instructions (3.) bring water to a boil, but avoid heating wax over 185 degrees F. Continue boiling etc.'

In my opinion this is nearly impossible to do except at higher altitudes perhaps somewhere between 4000 and 8000 feet elevation.

Here, our water boils at about 208 degrees F. I think your instructions in (3.) were written for the double boiler method where the outer container could boil but the inner container with the wax would be monitored carefully to keep the temperature below 185 degrees F.

Russell Peter
P.O. Box 6712
Kennewick, WA 99336

Pesticide Safety

Dear Editor:

We have had a serious infestation of sunflower beetles here in the Dakotas from July 11, 1983 to July 30, 1983. During this period over 800,000 acres of sunflowers were sprayed with a new pyrethroid spray, Pydrin 2.4 EC EPA Reg. **#201-401.** We operate over 4,500 colonies of bees on sunflower locations in North Dakota. Where Pydrin was used to control sunflower beetles our bee losses were nil.

We have been in the bee business many years and have had extensive experience in operating bees where pesticides have been in use. (South Texas Valley, Florida, California, etc.) Never have we seen a pesticide with this type of result.

I. Minimal bee loss
II. Human Safety
  A. Safety to Aerial Sprayer
  B. Game and Fish Departments
  C. Farm Families
III. Economical
  A. Farmers and Sunflower Growers
    1. Kills target insect and has a 7-14 day residual.

Jack Meyer Jr. and I, of A.H. Meyer & Sons Inc., with the help of several beekeepers from each state plus the National Sunflower Association, State Game and Fish Departments and various sunflower and seed growers are at the moment applying for a Section 18 (specific exemption) for the use of pyrethroids (Pydrin 2.4 EC, EPA Reg. #201-401, Shell Co.), Ambush, (3.2 EC, EPA Reg. #10182-18, I.C.I.) Pounce (3.2 EC, EPA Reg. #279-3014, F.M.C.)

In the state of North Dakota, the governor has passed a crises exemption for the use of Pydrin to control the sunflower beetle. This expired on August 3, 1983. The states of North Dakota, South Dakota and Minnesota are applying for a Section 18 for the use of Pydrin, Ambush and Pounce. It will also be used to control the seed weevil, sunflower moth and banded sunflower moth.

The reason we are applying for this Section 18 is that the synthetic Pyrethroids pesticides are at the present time not federally registered and labeled for the use on sunflowers. They **are** federally registered and labeled for use on cotton, cabbage, broccoli, peanuts, pecans, peaches, apples, tomatoes, etc.

We personally feel that the public, especially beekeepers and farmers should be made aware of the fact that there are new pesticides on the market that will kill the target insect and give the beekeeper a minimal bee loss. It is far safer for the public and the environment.

The faster the beekeeper and the public are informed of this, the better. Time is of the greatest essence, economically speaking for the beekeeper.

Synthetic pyrethroids are toxic to bees. We will experience a field force loss, but in contrast to the other pesticides which are now being used the loss is minimal.

From our experience, where bee hives were placed close to fields sprayed with Pydrin, only 5-10% field force loss was experienced. This compared to 80-90% bee loss where the fields were sprayed with methyl parathion.

Julio P. Diaz, Jack Meyer Jr.
P.O. Box 61
Winfred, South Dakota 57076

A New Organization

Dear Editor:

At approximately 3:00 AM every morning I wake up in a panic and ask myself what is going to happen to Powers Apiaries when the government quits buying it's honey? Will honey become, like beeswax, without value?

It seems to me the only long term solution is that the United States beekeeper is going to have to learn to sell his honey. Certainly the packers and dealers will be of no help. Their commitment to imported honeys seems irrevocable.

The two characteristics that all beekeepers have in common are: our desire to produce honey and our dislike of selling it.

Honey is perhaps the easiest food in the world to pack. Because of this, every beekeeper can be, and sometimes is, a packer. What none of us understand is the modern American food market. We don't understand how to package honey, how to promote it, how to advertise it, nor how to distribute it. We buy the cheapest jar, the cheapest label, and sell it at the cheapest price. It is no wonder the housewife thinks it has no value.

Glenn Gibson said that when the beekeeper loses the prices support program he is going to have to stand in line to get a pass to get in a super market. To beat one billion Chinamen on price will force a reduction in our standard of living so severe that it will require food stamps and welfare to keep us from starving to death.

The majority of honey on the market now is just another sugar syrup. It is overheated, blended filtered, homogenized and mislabelled! Clover does not taste like clover, orange does not taste like orange and frankly, damn little of it tastes like honey.

This letter is a request that you join a new organization, an organization of United States beekeepers who pack or want to be packers. An organization that would be devoted to maintaining the integrity of United States honey; an organization that would help it's members pack, package, promote, advertise and distribute their honey. An organization devoted to adding value to its honey by marketing a superior product.

If there is enough interest in a United States Beekeeper Packer organization, we would have an organizational meeting at the Federation meeting in Minneapolis in January of 1984.

If interested, please write Powers Apiaries, P.O. Box 327, Babson Park, Florida 33827. Please state in your letter if you would attend an organizational meeting in Minneapolis, and if you would make substantial financial contributions to a young marketing effort.

Jim Powers
RR 1, Box 161 E.
Captain Cook, HI 96704

Research Review

By DR. ROGER A. MORSE
Research Editor of Gleanings
Professor of Apiculture
Cornell University
Ithaca, NY 14853

Hygenic Behavior And Chalkbrood

Chalkbrood is a fungus disease of honeybees that was introduced into North America sometime during the 1960's. It spread across the continent rapidly. In some cases I saw whole apiaries in which all colonies were severely affected and in other cases little damage was done. Chalkbrood is one of those things we have been forced to live with and that causes all beekeepers a low level loss each year.

The paper below examines more closely the natural resistance to chalkbrood that some bees show. A number of years ago Dr. Walter Rothenbuhler of Ohio State University showed that bees differed in their natural resistance to American foulbrood. Those bees that are resistant remove dead larvae from the hive quickly. It has now been shown that this same hygenic behavior aids in the control of chalkbrood.

The conclusion of this study is that the "replacement of queen bees whose progeny exhibits poor hygenic behavior would be advantageous, not only in controlling chalkbrood, but other brood diseases as well." In other words colonies that show heavy chalkbrood infections should have their queens killed and be requeened from stock showing little or no infection.

Birds & Bees

Some birds appear to prefer honeybees and other stinging insects over the non-stinging kind. A 1932 survey showed that some 300 species of birds in North America would consume stinging insects but none of them are considered serious pests of honeybees. The situation is quite different in some parts of the world where some beekeepers have called some birds major pests.

One family of birds, the meropidae, which have as their closest relatives the kingfishers, are officially called the bee-eaters because of their habits. There are 21 species that are mostly African but some Asian. Most bee-eaters watch for passing insects from an exposed perch and take them on the wing. It is said that one third of their sorties are successful. The outside hair portion of an insect's body cannot be digested by the birds. Several times each day the birds regurgitate "a firm, blackish, odorless pellet of indigestable insect sclerites.

Not everyone considers the bee-eaters as pests. In some places where wasps are also known to be honeybee predators the birds may consume a sufficient number of them to be of benefit. The author concludes that the relationship between the birds and bees is still too little studied and as the beekeeping industry grows in parts of Africa and Asia there may be more conflict between the birds and the bees.

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Fry, C.H. Honeybee predation by bee-eaters, with economic considerations. *Bee World* 64:65-78. 1983.

The Genetics Of Varroa Mites

Fertilized females of the mite, *Varroa jacobsoni,* a parasite of honeybees now established in many parts of the world, move into brood cells just before the bee larvae spin their cocoons and the cells are capped. The eggs are laid after the cocoon is spun. The male mites that are produced do not leave the brood cells in which they are reared. They are much smaller, paler and more fragile than their sisters. Unlike the female mites, which spend a part of their adult life on adult honeybees, sucking blood, the males live only on immature bees, and cannot feed as adults. In fact, they die at about the time the adult bee emerges from her cell. Thus a male *Varroa* can mate only with the females that develop in the same cell. Usually, these are the brother-sister matings; sometimes several fertilized female mites lay eggs in the same brood cell, but often there is only one.

Research conducted in Brazil, where the mites are common, shows that the sex determination system in this species is haplo-diploid, as in honeybes. The males are haploid; they have only half the number of chromosomes found in the females. Thus the offspring produced by brother-sister matings get ¾ of their genetic material from their grandmother (¼ from their mother and ½ from their father, who is also their uncle) and ¼ from their grandfather (by way of their mother).

The effects of this high degree of inbreeding are now being investigated. Most plant and animal species have intricate mechanisms and/or behaviors that prevent inbreeding as its effects are often disastrous. Many aspects of mite biology are not understood, including the low number of eggs produced by each female and the fact that some females apparently do not lay eggs at all. It is possible that inbreeding bears on some of these questions.

This information about the genetics of the mites was obtained by dissecting the embryos from pregnant female mites and placing the tissue in a solution where the chromosomes could be counted; some had 14 and others 7, indicating the halpodiploid situation.

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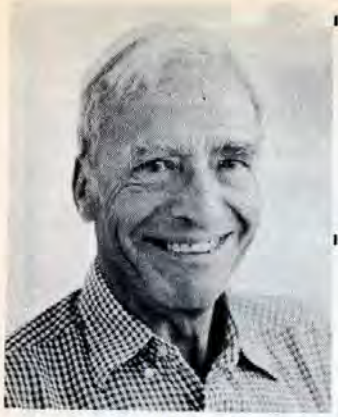
Steiner, J.S. d G. Pompolo, C.S. Takahshi and L.S. Goncalves. 1982. Cytogentics of the Arcarid *Varroa jacobsoni.* Brazilian Journal of Genetics 5:841-844.



Siftings

By CHARLES MRAZ
Box 127
Middlebury, VT 05753

Super Sizes

There certainly is no shortage of things to write about with apiotherapy and in beekeeping; the only shortage is time to write. Being fairly active in such things as apiotherapy I do come across information on occasion that may also be of interest to other beekeepers. I notice in the beekeeping magazines there is still some differences of opinion on the size of supers to use for surplus honey production. One argument that is used for the deep supers is that you handle less supers to extract the same amount of honey. Having used supers of all sizes in commercial honey production over the past 60 years, I started out with deep supers. When a beekeeper is young, has a strong back and not so much under the bee veil, that argument may have some merit. However, more honey can be extracted much faster in shallow supers, 5¼" depth than any other size for many reasons.

First, whatever method is used to drive the bees out of the supers, bees can be cleaned out with fume boards and blowers much faster than deep. They are faster than deep. They are easier to uncap. They extract much faster with less breakage of the combs. The modified 6½" super is better than the deeps, but it is still too heavy to handle all day, every day. With just a few hives of bees, it doesn't matter whether time is a factor, or a "broken back".

Varroa Mites

Now that the varroa mite has become a serious problem it makes me wonder what is the "natural" control of this mite with honey bees. The Acapulco Apimondia meeting book just released has an interesting article by a friend in Korea. They have been trying out some queens from the U.S. in their hives in Korea and they mentioned that bees from Mraz queens were the last hives to become infected. Varroa apparently has been there for many years.

They then mentioned an interesting observation, that my queens seemed to have a harder, tougher cuticle, the outside skeleton of the bee, with the remark this would give the bees more protection. Is it possible for bees to have shell or cuticle so tough that the varroa could not penetrate? A good question.

Much of my time lately has been spent at beekeepers meetings and it is surprising the amount of interest there is now in apiotherapy. Ten years ago anyone even talking about apiotherapy, even among beekeepers was considered a "nut". There is a growing interest not only with beekeepers and the general public, but even among the medical profession. This interest I feel sure is the result of a number of determined advocates that persisted in face of strong ridicule and opposition. Now that many beekeepers, especially hobby beekeepers are getting actively interested, even treating their family, friends and neighbors with bee venom and other forms of apiotherapy, this interest should continue to grow as it well should. There is no way more convincing than a personal experience to make a convert. With rheumatic disease, so far, there is no other treatment that is safe and effective as bee venom therapy. This is also true with most other bee products, they cannot do any harm, even if they may not do much good.

Sweeteners

It is interesting to see this "battle" going on with sweeteners, especially with the non-calorie, artificial sweeteners. Sacharine and other sweeteners of this type have been known to be, for many years, carcinogenic. Twenty-five years ago a doctor at the Sloan Kettering Institute for Cancer Research, gave me a lecture on sacharine that would scare anyone from ever using it. Yet, the demand for this material was so strong it is still being used by diet-concious weight watchers. It is hard for me to understand that some people, in making a choice between cancer and weight loss, would rather try to lose weight and expose themselves to possible cancer, using sacharine.

The latest sweetener in this battle for the weight-conscious public's dollar is aspartame, now being used in many soft drinks. It seemed strange to me I have never seen any research on the possible side effects. Recently a warning came out by a doctor of the Massachusettes Institute of Technology, that aspartame has harmful effects on the brain, and may cause dizziness and other brain disorders. My guess, it will not stop, or even curtail the use of aspartame even if it does have possible detrimental side effects. The desire to be "skinny" without working for it is too strong. When you get right down to it, it turns out after all, natural honey is the best, safest and healthiest sweetener there is. I believe a person can lose weight easier with honey in the diet than any other sweet, because of its natural, simple sugars. Honey used in place of sucrose tends to reduce the craving many people have for sugar. In spite of "big money" involved, it usually turns out that Mother Nature knows best, something that many never seem to learn.

Queen Marking

Recently, a reader asked if liquid paper paint would cause queens to superseded. After using it a year, I have seen no evidence of this. Finger nail polish is far more objectionable, and even this does not seem to cause supersedure. After painting with liquid paper, I notice bees do not "worry" the queen as they do when they are painted with finger nail polish. □

Bees and Gardens

At this time, the latter part of August, our gardens may look somewhat unkept, even weedy. If they have been productive, that is all that matters. For some people the very appearance of a garden may involve a matter of misplaced pride. Pride is a good thing, in what we are doing and in what we have. A neat appearance is a sign that a beekeeper or a gardener is tending to business, and usually enjoying the work.

By an unkept garden I refer to the appearance of normal, maturing vegetation, the beans, pea vines, potato vines, stalks of sweet corn and cabbage plants without heads, all of which we expect to see at season's end. These are not signs of neglect, nor is the appearance of a few weeds.

Of course, some gardeners, who make the rest of us look negligent, clean up this old vegetation as soon as the edible portions are harvested. This is what the gardening manual advises, but most of us are not that finicky. I think most gardeners sort of let down after the main harvest, prefering to go fishing, golfing or to take the family on vacation before school begins. This is the way I think it should be. Those who clean up their gardens clean as a pin probably frown upon those who tend to neglect their season's end chores. I always want to suggest to those who clean up their garden early to sow a cover of rye—or plant turnips—or do anything to protect the soil during fall and winter. A mulch of leaves, straw or rotted manure would be fine.

Now that I have harried the gardeners, at least some gardeners, what about the beekeepers who have extracted their honey by the middle of July, empty supers cleaned up, stored and fumigated by the first of August? What do **they** do after all of the hives are checked for level (with 2.5 degree of forward inclination), an already nearly perfect paint job touched up here and there, a few bottoms and tops replaced which began to show some discoloration and the hive bodies checked for unsealed cracks and seams which could admit cold air?

I'll tell you what these zealous beekeepers are probably doing. They are out checking on bee yards such as mine, and maybe yours, shaking their heads in dismay. They are probably at this very time debating whether to call the bee inspector to clean up an obvious nest of AFB, judging by the outside appearance of hives, or, putting a match to these hives just to demonstrate a principle—a lesson to us who tend to leave bottom boards in service until the rails collapse. They loathe neglected, unpainted hives with peeling paint and become almost incoherent with anguish at the sight of exits and entrance holes through which bees are happily flowing like water out of a buckshot barrel!

What can be done for the inveterate early season finisher? Obviously this person is not enjoying beekeeping, or any other hobby, or he or she would be (like the rest of us) dallying the summer away before rushing into such important tasks as extracting our honey crop and putting the supers away, with moth crystals, at season's end.

For those purists who claim to always get a least a hundred pounds of honey per colony (making certain that beekeepers like myself who only dream of such yields, know it) could perhaps be enticed into inspiring the rest of us (and our bees) during the late season doldrums. Since their bees never swarm, they claim, they could teach we unenlightened souls who have colonies which furnish the replacement stock for all unoccupied hollow trees and building walls.

Another suggestion is to draft these masters into an elite beekeeping organization to serve as models for others. All discussions would no doubt be on a very high level, purely scientific and centered around issues of great importance. There would be no interruptions from poor, uninformed souls whose package bees absconded, with combs being eaten by "funny looking little white worms" and whose wife is threatening to evict him and his "bee junk" which is taking up her side of the two(?) car garage.

Perhaps these models of efficiency could explain how they manage to harvest only U.S. Choice grade white honey while the rest of us get more than our share of gooey, dark, off-flavored honey which we try to recycle back to the bees, without winter killing them.

I realize this is being rather hard on the breed of beekeepers that most of us should admire. They are the ones who know the scientific names of the bees of the Central African Republic, while most of us did not even know there is such a country. They are maddingly knowledgable about where the African bee was last seen, all about the latest mite infestation) and, more importanting it an infestation) and, more importantly, just how to go about handling the problems.

Perhaps by now you are beginning to think that I am envious of my superiors. Not at all.

Ignorance may be bliss. How otherwise could I justify making as many mistakes as I do each year after some forty years of practice with bees? I cannot always blame these errors on the weather, uncooperative bees or the U.S.D.A. By admitting that I am still appallingly ignorant of the ways of bees, takes the sting(?) out of my poor showing by comparison with these individuals, who I really do admire. At least, I admire the smoothness of their delivery, their irreproachable logic of how my bees should be kept.

If I am a dolt about managing my skeps, at least it keeps me quiet at bee meetings when I listen to such erudite lecturers. I keep wondering (when I should be taking notes) why these lecturers are always out-of-staters.

I guess I'll never sufficiently understand bees to become a master. Frankly, I'm afraid to take a master's examination and probably never will.

I can be fairly objective about evaluating my own ignorance of bees but when it comes to having a neighboring beekeeper come by in September or October, and haughtily suggest that supers should be in moth-proof storage instead of reposing, half-filled on my sorry hives I tend to wish my visitors had not read so many books on how to keep bees or had taken so many notes at the lectures. □

L. Goltz

October 9-15 is National Honey Week! Support efforts to promote and market hive products!

Capping The News

THE EDITORS

"Beekeeping Small Talk"

APHIS Plans for Africanized Bees & Varroa Mites

The USDA Animal and Plant Health Inspection Service has released its "Action Plans" for the Africanized Bee and the Varroa Mite. These guidelines are intended for use only when a Varroa or Africanized infestation is known to exist within the U.S., and address measures for implementing eradication and prevention of spreading. More specific emergency action is to be based on information at the time of infestation.

With regard to the Varroa mite (Varroa jacobsoni), a parasite of brood and adult bees, APHIS has established survey procedures to detect and define the extent of area infestation. Based on such determinations, quarantine measures will be imposed and treatment techniques, ranging from localized fumigation to destruction of complete infested areas will be undertaken. The APHIS plan describes ways by which the presence of Varroa mites can be detected. They include: examination of brood and/or young bees in the brood nest for evidence of the reddish-brown, oval mites, and inspection of hive debris in which mites have fallen. Additionally, the plan details the type and usage of various chemical agents applicable to decontamination or destruction of infested areas.

The Varroa was first observed in Southeast Asia; but its present habitat includes most of the beekeeping world. As of this time, Varroa has not been confirmed to be active in U.S. colonies. Because the Varroa's parasitic activities can cause a deterioration of colony strength, and possible mortality, the seriousness of infestation cannot be underplayed.

The Africanized bee, now in Costa Rica, is a more familiar threat than the Varroa. APHIS plans for dealing with Africanized infestation are similar in respects of surveying and quarantine, for the Varroa. Guidelines stipulate that in hives where Africanization is indicated at less that 7%, requeening and/or destruction of queen or drone brood will be at the beekeeper's discretion unless undesirable behavior becomes evident. Africanization of between 7 - 9% will require requeening and destruction of all brood. When probability of Africanization is greater than 9%, the guidelines require that all bees and brood be destroyed. Techniques for destruction by the use of chemical agents is provided in the plan.

Both plans were developed, by APHIS, with the assistance of contributions by representatives from the hobbyist and commercial elements of beekeeping, plus the state regulatory officials, university spokespersons and various governmental agencies.

Honey Labeling Requirements

Honey producers should be thoroughly advised as to the precise definitions of honey labeling requirements. A recent "cease and desist" order from the office of the American Beekeeping Federation's legal advisor, Robert M. Rubenstein, to a California producer, illustrates that importance. The producer involved in this case had been feeding bees an invert nectar with flavored extracts and food coloring. The bees processed this along with their natural forage to produce a flavored and colored honey, including strawberry red and blueberry blue. The end product was then marketed as "Pure Honey". Despite an apparent verification, by the U.S. Food lab in Maryland, that no traces of chemical additives were present, and reported approval of the California Department of Agriculture, the producer found himself in violation of federal labeling laws that prohibit application of the word "Pure" to honey that has, in any way been altered by an artificial process. When in doubt as to labeling regulations, a beekeeper should request, from the nearest office of the Food and Drug Administration, detailed information and assistance.

Bees & Zoning Ordinances

The Seymour, Connecticut Planning and Zoning Commission recently drafted a proposed amendment to their ordinance framework which provides specific definitions for farming and establishes, as a prerequisite to agricultural livestock maintenance, a tract of at least five acres. Beekeeping is encompassed by this proposal, but is subject to the issuance of special beekeeping permits based on a number of factors including: number and placement of hives, variety of bees, whether anyone in the surrounding area is allergic to bee stings. Zoning ordinances are of obvious concern to beekeepers in many areas. As terminology and motivations for such actions are often vague and elusive, beekeepers should attempt to stay abreast of how specific zoning issues are handled and resolved. For further information or the opportunity to voice an opinion on the Seymour proposed amendment, write: Karl Z. Trybus, 20 Old Ansonia Rd., Seymour, CT 06483.

The Alberta Bee

From Rosemary Hartley-Weaver, Chesley, Ontario, was received an article reporting the work of Tibor Szabo, a research apiculturist at the Agriculture Canada station, Beaverlodge (450 kilometers north of Edmonton). After five years of breeding, Szabo and his associates have produced a strain of bees that are intended to replace dependency on California bees. The "Alberta Bee" is said to be more hardy and winters better than the Californian imports, while retaining the high productivity of the southern bees. The bees are being raised at Fairview College in northeastern Alberta, and Olds Agricultural College north of Calgary. Reports from beekeepers testing the strain, are positive and it is hoped that this new variety will greatly increase the province's nine million kilogram honey crop.

Thar's Gold In Them Thar Bees

Two Canadian exploration companies have been taking part in experiments to learn if they can use bees to discover gold.

Initial results are encouraging enough for spokesmen for Cominco Ltd. and Placer Development Ltd., both Vancouver-based, to see a future in the use of bees.

The man behind the idea is Harry Warren, a retired professor of geochemical engineering at the University of British Columbia.

It was Warren who, 30 years ago, produced a paper that suggested the high

Continued on page 538

Bee Talk

by DR. RICHARD TAYLOR

Trumansburg, NY

October is, in my experience, the time of year when honey sales are at their peak. I've usually closed my honey stand around the end of October. The frosts have come by that time, the first snow flurries follow soon after, and the chill makes people think of pancakes and muffins and all the other good things that honey goes on. They are apt to get in their winter supply in October. So maybe this is a good time to talk about selling honey.

I have a theory about this which I see confirmed almost daily. The theory is so simple and obvious that it would not need stating if it were not that it is so widely ignored. Beekeepers should be the last to disregard it, and yet they do. The theory is this: It is easy to sell something that's good, and at the very top price.

I was reminded of this last evening. There is a little ice cream parlor in my neighborhood that sells small, single-dip cones at a dollar each. That's for the small size. The prices go up from there. And last evening that place was swarming with business, overflowing onto the sidewalk. How come, when you can get good ice cream for about half that all over town? Answer: The ice cream there is just a little bit better than anyplace else. There is not all that much difference, but enough so that these people can claim, with truth, that their's is the best.

It's the same with everything else. The best restaurants are never at a loss for business, even when their prices are sky high. A lot of people want quality, and they simply don't care what it costs. During the economic slump of the past two or three years the makers of expensive luxury cars have done just fine. Perhaps there is a large and growing luxury class of people who constitute the market for quality things. This worries me some, when I contemplate the widespread hardship and poverty, for it suggests an increasing polarization into rich and poor that might eventually explode with dreadful results. Still, be that as it may, there is a strong market for quality things.

And that provides the context for my remarks about selling honey.

Last summer, just as I was about to get my honey stand set up for another season of brisk business, a honey packer came along and said he'd buy my entire crop of comb honey in round sections. I took him up on it. I really missed my honey stand, but I had lots of other things on my mind just then, and it looked like an easy way to

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It is easy to sell somebody something that's good, and at the very top price. Concentrate on quality.

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move my whole crop at one stroke. Even so, I didn't have even half the comb honey he wanted. He said he was going to ship it all to the city for resale.

Then this summer the same thing happened again. The same packer telephoned, but by that time an exporter down in New York City had called to say he'd buy as many as four thousand round sections if I had them. I don't raise that much comb honey, but I offered him my whole crop at $1.15 each. The deal was struck at once, and a few days later there came in the mail his deposit of $500 on the purchase, even before I had harvested it. His plan is to ship it to all the Arab countries. Apparently high-quality things are in great demand there, and God knows, they have the money to pay for quality.

And there is the key word— "quality." No honey measures up to good comb honey for quality. Some consumers are still puzzled by the round sections, and I have heard reports of difficulties getting customer acceptance. But I know absolutely that there is no difficulty gaining exceptance for quality. Once people have tried these beautiful round sections, then they certainly come back for more of them, over and over, provided the honey in them is of the very best quality.

Extracted honey never quite matches good comb honey for quality. Even when beekeepers extract and strain it and pack it with care, it is never quite as good as in fresh white delicate virgin comb. But the worst of it is that beekeepers sometimes do not even strive for quality, which is very sad. I have seen honey houses where honey was being spun from dark combs, even combs containing brood, then run through sumps and pumps and heaters, often mingled with debris, brood, wax and dead bees, then strained and bottled hot. The degradation of quality in such a process is appalling. And then the beekeepers, some of them big commercial beekeepers trying to make their living this way, complain of the low price of honey. I am not one to try telling commercial beekeepers how to use their resources to best advantage, but I do have something to say to the sideliners: Concentrate on quality. Raise comb honey, or, if for any reason that is not practical, because of weak honey flows or whatever, then **at least** use queen excluders, spin honey only from virgin combs, that is, combs that have never had brood in them, and do not heat it at all. You will miss some of the mass market, that pays the bottom price, but you will get, increasingly, the smaller market that wants quality and is happy to pay whatever price is necessary to get it. Once people have found something good they tend to come back for more. It is practically a law of nature. So the approach you should take is really quite simple: Produce something just a bit better than others manage to do. Human nature and the laws of the market place will do the rest for you. □

The Bees Of Persephone

Take for joy
from my open palms
a little sun a little honey
ordered by the bees
of Persephone.

No one can free
an unmoored boat
or hear the shadow
shod in fur
or move without fear in the forest

We are left just
kisses prickling
like tiny bees that
die when the leave
the hive.

Deep in the night's
transparencies they hum
at home in mountain wood,
in mint and lungwort
and the past.

So take for joy this
wild present
this dry necklace of bees:
each died turning
honey to sun.

**my version of a poem*
by Osip Mandelstam

D. Giannini
172 Adams Rd.
Williamstown, MA 01267

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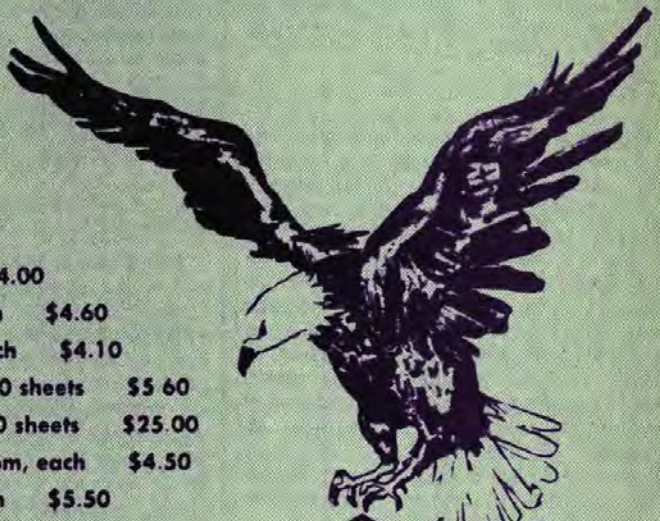

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Beekeeping Technology

By DR. JAMES E. TEW
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As fall approaches each year, invariably yellow jacket and hornet populations begin to show their pesty side. We as beekeepers are always concerned about positive publicity and how to achieve it. Suddenly it seems that all our efforts are of questionable value. The same neighbors, friends, or associates that have been listening to our rhetoric about the positive value of bees and honey call you to report that one of your bees stung them. That's right. They came right out of that big, oblong gray nest and stung him just as he was going to get in his car. As enthusiastic beekeepers, we often times find it difficult to believe that non-bee people could have so much trouble distinguishing between hornets, yellow jackets, and honey bees. Speaking from experience acquired after **many** phone calls from concerned individuals, I can tell you it is difficult at times to be sure what insect is in question.

An average call to the office goes something like this: "I've got a big nest of bees under the west eve of my house." (There is always a pause after this statement to allow me a few seconds to realize the full significance of the situation. To this day, I am not sure what my response should be. Normally, a non-descript, "I see" seems to be acceptable.) I usually ask, "Are they bothering people or animals?" A possible response would be, "Well, no, they are not, but my wife is deathly allergic to "bees" and must go to the emergency room each time she is stung. I would like to get something done." I am then required to explain that even though the University is tax supported and realizing the caller is a taxpayer, we simply do not have the personnel to send out to remove wasps and hornets. That comment never really makes anyone happy. I suggest that the party try to develop a positive relationship with the hornet nest in question and wait until about the third killing frost for the rest of the nest to die out. The only other alternative is to pay an exterminator. The concerned party reluctantly thanks me (usually) and departs leaving me with a sense of inadequateness. At a university I attended for several years, we routinely moved the bees away from the university apiary to avoid great numbers of complaints from football fans that attended early fall games. Yellow jackets, hornets, and unfortunately, honey bees were attracted in great numbers to the bountiful loot of spilled pop and discarded hot dogs. A neat maneuver by a yellow jacket is to land in the mouth of a pop bottle and patiently wait to be imbibed by the spectator. A "wild" yellow jacket ("bee") inside one's mouth at a public event always results in a spectacle that everyone in a 50 yard radius will be aware of. My point in all this rambling (even though the story is true) is that the individual involved almost always thought the University bees across the parking lot were to blame. Hence, our annual bee move to avoid non-positive publicity. Even though these occurences are from a university view point, similar stories routinely happen to practically all beekeepers some time during their beekeeping career.

The biology that brought hornets and yellow jackets to this pestiferous status can be made fairly simple. Yellow jackets and hornet colonies are annual and as such do not over winter. Rather, mature mated queens pass the winter in protected areas (e.g., under tree bark, mulch, somewhere around your house). Be assured that all such queens do not select the best place and may not survive the winter. But some always do. Those that do, select a nest site some where the next spring and working alone, begin to construct a new nest. Old nests are not used but should be torn down since they may attract new queens looking for home sites. During this period, these insects are considered to be beneficial since their young are reared on the tissues of other insects, along with other foods acquired at picnics and around garbage dumpsters. Since population numbers are low, they just are not seen as much. As the season develops (late July), the population peaks and these little insects are no longer welcome.

People with yellow jacket problems obviously want to know what they can do to destroy the nest with no personal risk invovled. Obviously, there is no sure technique. Broadly, there are two approaches to populations: destruction of individual colonies or killing foraging populations in the field.

Undergound nests are fairly easy to control. Simply pour an insecticide such as propoxur (1.5 pound/gallon emulsifiable concentrate at 8 oz./gallon of water) or put a 5% mix of sevin dust at the entrance. Plugging the net entrance with cottom that has been wet with insecticide will hasten the colony die-off.

Nests inside of walls of houses are more difficult to control. The nest entrance should not be plugged since this will only force the insects to find other exits (sometimes inside the house). One reported technique that seems to work well is to spray commercial wasp and hornet sprays into the entrance for 10-30 seconds. Then plug (an exception to the comment above, since the nest is being treated with an insecticide) the entrance with steel wool that has been saturated with an insecticide like sevin to kill off the returning foragers. Poison baits and chemical attractants are available but are not particularly common.

A very simple technique that is surprisingly helpful is strict control of garbage. Many yellow jacket species are scavengers that are attracted to such areas. Tight fitting can lids, along with good hygenic measures, are normally enough to prevent population from becoming established.

Control Summary

1. Yellow jacket nests should not be eliminated unless they have become pests. All yellow jacket species are considered beneficial.

2. Extermination techniques should be attempted at night while most foragers are inside the nest.

3. Ground nesting speices can be eliminated by using insecticides (Sevin, propoxur) poured into the nest entrance.

4. Colonies in houses may be controlled by spraying insecticides containing pyrethrins into the nest and plugging the nest with a sevin-saturated cotton ball.

5. Aerial nests are normally killed quite easily by spraying with commercial wasp and hornet sprays.

6. Good results may obtained by hygenic handling of garbage.

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BEEKEEPING FOLK ARTS

Honey & Hive Products For Cooking And Other Home Uses

By AMOS ARBEE

"I'm just a common man, driving a common car etc. etc." is a current popular western song on the radio which my "Antennae" sort of tuned in on recently. The common bit intrigues me and I cannot help but wonder how many of us on our daily travels just take most things as just common ordinary ol' things we see everyday, and don't get overly excited.

But lets suppose, just for the sake of supposing, that the next time we see that common ol' weed growing alongside the roadbed or wherever, that possibly (just possibly) someday it may be the common ol' everyday thing that turns out to be the much needed plant which produces the necessary secretion to stop the growth of cancer cells in our body. Of course honey could also be regarded by some as just plain ol' honey. But as anyone who has had the opportunity of using honey in their cooking and baking recipes will agree wholeheartedly, it does well for the finished product even though it may just be common ol' honey.

"Shoofly Pie"

Combine 1 cup molasses, 1 cup lukewarm water and 1 teaspoon soda. To make crumbs, mix 3 cups flour, 1 cup dark honey and ½ cup shortening. Keep ½ crumbs separate. Mix the rest of the crumbs with the syrup mix and put into two or three pie plates lined with dough. Put crumbs on top, and bake at 350 degrees. A traditional Pennsylvania Dutch treat!

The other evening on T.V. I watched with interest as the comeback of the McGuffey Reader for school children was discussed.

This reader, to me, was not only for learning to read, but I also felt that it was a book chock full of golden rules which apply to one's success in life.

At any rate, honey, in my opinion, needs no comeback. It still has the same fine qualities it always maintained in cooking and baking recipes.

"Honey Peanut Candy Roll"

1 cup mild flavor honey
1 cup peanut butter
1½ cups skim milk powder
1 cup chopped peanuts

Cream honey and peanut butter together. Add milk powder gradually until a stiff mixture is obtained. Roll in chopped peanuts. Chill well. Slice in any size you wish.

Thoughts On Propolis

The value of propolis does not seem well known with the research one is presently able to find on the subject. However, if we can accept that what has been done to date (namely in Europe) on the value of propolis, it may well be that some very worthwhile purposes may lie within waiting to be expanded upon by some creative minded people.

Aside from the important possibilities offered by propolis for medicinal purposes. there are other claims that may warrant research into the matter of whether or not propolis has other applications. Of course, one of the better known uses is in the manufacture of violins. With this particular thought in mind one might be interested as to if propolis may have uses in the manufacture of fine furniture products in general.

In addition to periodic articles, on propolis, in bee journals, interested readers can find many reports in the published accounts of Apimondia Symposiums and Conferences. Also: *Propolis the External Natural Healer,* Dr. Felix Murat, 1982; *Proplis,* Apimondia Publishing House, 1978. □

Wintering Colonies

GLEN L. STANLEY
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Iowa State Apiarist
Des Moines, Iowa 50319

There are a number of factors to be considered when attempting to overwinter colonies of bees. Some questions need answering beginning with "Do you hope to winter colonies successfully either for pleasure or profit"? Do you intend to maintain the same number of colonies or increase the number and do you dislike the rendering of combs and the additional cleanup work that is involved with the loss of colonies? Successful wintering coupled with a good brood equalization program allows an increase of colonies without actually buying bees.

Wintering colonies of bees seems to be the greatest problem confronting the beekeeper in recent years. The exception to this is the beekeeper who is located in an area of the United States where more moderate climatic conditions exist. Such areas are found in only parts of Florida, Texas, Arizona and California.

To winter colonies of bees so they merely exist is only a start toward successful wintering. The real success is a combination of survival plus colonies of good strength and in an overall good condition. Colonies that survive the normal winter with only a handful of bees and a queen will have been chilled during the colder part of the winter and will soon lose her fertility and she will lay only non-fertile eggs. Such a small amount of bees could not possibly develop into a productive colony even with all other conditions ideal.

The major breakdown in successful wintering is undoubtedly the management and lack of preparation by the beekeeper. It is difficult to even suggest any part of manipulation in management that does not relate to wintering. The way colonies are managed during the productive season can be such that the bees keep their brood chambers well organized throughout the season, including the days just prior to the adding of the winterizing material.

If, at the beginning of any major honey flow, a single surplus honey super is added and allowed to be nearly filled before more are added it will cause the bees to keep the brood area of the colony organized and well filled. Adding additional surplus honey supers (always on top) will provide space for all surplus honey to be stored by the bees.

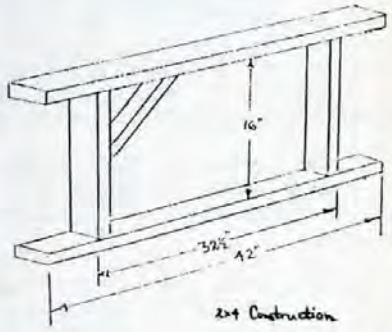
Many years ago while handling hundreds of colonies of bees we were favored by tremendous honey crops, even though we neglected doing some of the things that would have made us better beekeepers. During the late 1930's and early 1940's the bee produced honey in spite of us but our winter losses were such that were generally ordered a few packages to replenish hives where complete colonies had died. As we look back we now know that had we taken the same precautions, such as we take today, in wintering, considerably more profit could have been realized. Any winter loss of over 5% of colonies and the destruction of the combs involved can be the difference between profit or loss.

I believe that more variations and methods have been tried for wintering bees than any other phase of beekeepeing management. However, many methods have yielded little success. We were not to be outdone as far as method trying was concerned so we began a series of trials. Upon hearing of another beekeepers methods and a potential success we would try some new idea on a few colonies. Each year through various state meetings, and local meetings, as well as information from research people, some new ideas were incorporated.

About five years ago while my brother, Lloyd Stanley, was inspecting bees in North Central Iowa, a beekeeper, Russ Stevenson suggested that the use of styrofoam above the brood chambers helped the bees tremendously during the winter. We immediately installed some of this material in order that something positive might result. The styrofoam we use is of ¾ inch thickness. When placed directly above the frame tops we discovered that the bees gnawed away at the material and it was ruined for further use. The second year's trial was made with the escape hole in the inner cover closed and the styrofoam placed within the rim of the inner cover. The results of this was that there was not damage to the insulation and it can be used for years. It gave the same insulating effect as was obtained when placed directly over the frames. The styrofoam never draws dampness and it retains the heat from the cluster so the colony stays active. Be being so active the colony apparently controls the amount of humidity necessary but never in excess of their needs.

It was also about that time that I recalled that some 30 years ago I inspected bees belonging to L.D. Taylor who was then keeping bees in western Iowa. All his colonies were placed on what was termed H-frames. These H-frames were made of material long enough to accomodate two colonies of bees. During the summer the hives were moved far enough apart to facilitate managment, then before winter the two hives were moved closer together and then wrapped. We incorporated these H-frames into our operation and found that it prevented tipping of hives when they reach extreme heights during the summer and hives remain dry underneath all year round. We made the H-frames from 2″ x 4″ weather proofed material. Two pieces which make the front and back are each 42″ long. Two cross pieces are each 16 inches in length palaced to come even with the rails of the bottom boards when the hives are placed side by side for wintering. This created a dead air space beneath the bottoms of the hives during the severe weather. This helps in keeping the colony dry and warm. (see H-frame diagram) Mr. Taylor was using these frames prior to the advent of styrofoam so at the time each colony received a tray of chaff on top to help control the moisture problem.

The diagram below is that of a double H-frame which has been tried and tested and found to be advantageous as a support for two hives of bees. Hives remain stable with no tipping and the hive bottom boards always remain dry. If properly constructed there is a dead air space beneath the hives during the winter as the hives are moved close together and wrapped for winter.



Some 40 years ago we were made aware of a middle entrance initiated by Dr. O.W. Park who was doing research on bees at Iowa State at the time. We immediately adopted this entrance for wintering purposes and since that time no colonies have been lost from being trapped inside the hive. This entrance is constructed with the use of two pieces of cedar shingle sawed about an inch wide to fit along each side between the two brood chambers. The front opening is then reduced with a strip sawed from regular thickness board ⅜ inch by ¾ x 13

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Heads Of Grain From Different Fields

A Guest Column

By G.W. HAYES, JR.
And
PETER L. BORST

A Barrel Hive?

By G.W. HAYES, JR.
Agricultural Technical Institute
Wooster, Ohio

This is an idea which is so obvious that somewhere, someone must have surely seized upon this concept for a bee hive. I have never seen any research literature on this particular subject so at the risk of duplication, here goes.

Here at ATI we maintain an outyard that is stocked with functional developmental and experimental bee hives and equipment. Kenya Top Bar hives and African Long hives represent developmental and transitional equipment in this yard. One day in early summer while doing some work in this yard the thought occurred to me, while looking at the Kenya Top Bar hive that its design could be copied with very little work or materials with an item that is often thrown away here in the Unites States.

As most beekeepers know a honey bee in the wild, whether in a hollow tree or the wall of your house, tends to build its comb in the general shape of an ellipse. This is the reason the Kenya Top Bar hive is built in the shape of a trapezoid. It is attempting to copy nature and at the same time allow a beekeeper, in primarily third world countries, to maintain a convenient workable hive and prosper by keeping bees. When you look at the Kenya Top Bar hive one is automatically presupposing some very important things. We in the United States take for granted that: 1. All countries have a lumber industry that is able to supply the wood necessary to build this hive. 2. That some semi-sophisticated tools are available locally to cut the wood to the proper dimensions and then cut the angles necessary. 3. There is someone familiar with the function and proper use of these tools to make the hives.

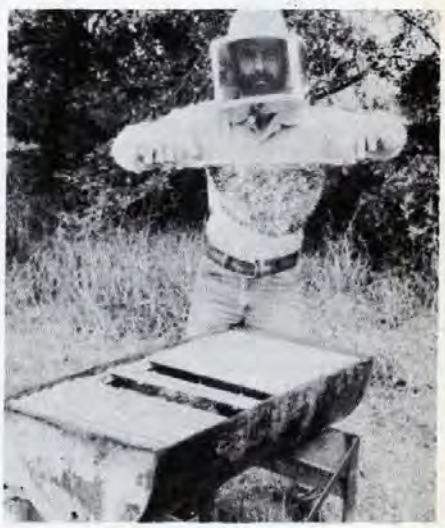
In many countries in Africa, Asia, Central and South America that is a lot to be taking for granted!

Now take a minute and picture a Kenya Hive. Sloping sides for elliptical comb built free style by the bees on the top bar with no side or bottom bars. Long and deep to allow a whole colony to maintain its brood rearing area, and store surplus without having to have extra equipment for "supering up".

Picture now an empty 55 gallon, or any other size barrel, cut in half lengthwise and laid on its rounded side. All the criteria necessary and provided by nature and the Kenya Hive are met with one cut of the torch, sabre saw or hacksaw blade.

The barrel that I used was a surplus barrel that had contained 55 gallons of antifreeze. It was cut in half with an acetylene torch in about five minutes. Using a sabre saw would have given me a much smoother cut. Next some type of frames had to be devised. I wanted to have this hive stocked with bees and built up in strength sufficient enough to be able to display it at the IAAD (International Agency for Apicultural Development) Third Developmental Beekeeping Seminar to be held at ATI in late July 1983, so I took the easy way out. I bought ten dollars worth of large quarter round moulding. This made 26 frames with approximately $^{3}/_{16}$" gap between frames for bee space in the hive. All that was done was to cut a flat spot on each end with a hand saw for a frame rest. The pointed or triangular side faces down into the hive to act as a starting point for the bees comb building. This edge was in turn coated with beeswax as an enticement for the bees to start a new home.

About two pounds of bees and a queen were secured from one of our hives at ATI and installed in the washed and cleaned out barrel with its top bars and stand. Five weeks later the IAAD conference began and low and behold the colony had grown to occupy six frames with perfect natural elliptical comb containing brood, pollen, honey and many more bees than when we had started out. It was working!



A positive response was obtained from everyone at the IAAD conference who had an opportunity to view the Barrel Hive. The most positive response was received from the participants from Tanzania, Yemen and Jamaica. They all expressed interest in trying this type of hive in their countries as a simple example of appropriate technology in practical beekeeping.

Not all countries have steel or plastic barrels, of course, and for some of those that do, the cost may be prohibitive for them. It may be cheaper for lumber and woodworking equipment in some of these cases, but, think of all of the countries that have an import/export trade in commodities that require barrels for shipping.

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Honey Marketing

Part V

By SIDNEY GROSS
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St. Charles, IL 60174

In this final article I'd like to discuss several miscellaneous tools you can use to increase your honey sales. These are available with virtually no effort on your part.

The label that you put on each honey container is such an obvious advertisement for you and your product that it should scarcely need mention at all. Commercially done labels are available from honey supply houses, many of which publish separate label catalogs. If you buy a quantity of these labels, all the additional equipment you'll need is a rubber stamp to imprint personal information. Commercially available labels tend to be colorful and cartoon-like in visual character. If your taste runs in this direction your problems are solved. Personally, I prefer a more conservative format and I designed my own label which I then printed. You can do the same on a mimeograph machine — or send the work out to a fast printer. In making your master or your camera ready copy you will be able to fit a total of nine labels (three rows of three) on an eight by ten sheet. The labels will be of a size which will fit most honey jars with very little trimming for the smaller sized containers. Whether you do your own work or send it to the printer be sure to use paper which is gummed on one side. You must specifically ask the printer for this kind of paper and he will most likely have to special order it. Preparation of the mimeo master or the camera ready copy follows the procedure I discussed last month when I described the honey newsletter.

You will have a wide color choice on the gummed paper; the color I use is goldenrod which I feel is a natural for this sort of thing. If you buy a ream of paper and put nine labels on a sheet you will end up with 4500 individual labels. This may sound like a lot but you will certainly use them up in a reasonable time period depending on the size of your honey operation. One word of advice: save your temper and pay the printer to cut the labels from the sheets on his machine. If you do it yourself it will take forever and the cut edges will not be absolutely square. In my book *Honey Marketing: Tips for the Small Producer* I illustrate several labels I've designed and also describe the legal informational requirements that a honey label should meet. Your name, address, and phone number should be printed or stamped on the label. This way, when people run out of honey they know where to reach you. Personal identification of this sort is excellent advertising should you be selling some honey through retail outlets since customers may return directly to you rather than to the store itself. You must also have the words "net weight" printed on the label. Since you will be using different sizes of containers the space to the right of these words will be blank and you will enter the appropriate weight with a rubber stamp.

Beyond your label, another common sense tool you can use to increase honey sales is a customer file. For those of you who are computer illiterates as I myself am, you can use plain old index cards for this purpose. Place a blank notebook near your honey display and ask people who buy from you to fill in their names to the index cards. On each card you have the customer's name and address as well as what they bought and when. The cards provide you with a very select mailing list. If you want you can Mail Christmas Cards to very good customers and certainly you will want to send everyone copies of the current newsletter when it comes off the press. The file cards will also tell you which of your customers are purchasing specialty items like cappings, comb honey, or candles. When these items become available you can notify interested people. They will be getting personalized service and you will be turning over your stock rapidly — so everybody will be happy!

If you own a mimeograph machine you can, with very little trouble, run off copies of a favorite honey recipe on letter size colored paper. Place one of these recipe sheets in a paper sack along with every container of honey you sell. Be certain that your name, address, and phone number are conspicuous on the recipe sheet so that people can stock up again after they've made the recipe and run out of honey. One word of caution about cooking recipes: the recipe you distribute should be for something you've tasted and liked and it must be tested. "Testing" means that you or your spouse have prepared the recipe, followed the instruction literally, and produced a satisfactory result. There is nothing worse than giving someone a recipe which does not work; if anything such a slipshod practice will discourage rather than invite repeat business. Ideally, you should have about ten different stacks of recipe sheets to distribute so that steady customers will not receive the same information each time. If this seems to ambitious then begin with one food suggestion and add a new handout to your collection every three or four months. If you are stumped for recipes, there are a many good honey cookbooks out and the bee journals have monthly food columns which will give you ideas and whet your appetite at the same time.

Your in-home selling area is vital to any selling you do. This might consist of only a few shelves on which you keep several of each size container or other item (candles, ceramic honey pots, gift boxes) you sell. Having only one item out will inhibit your customers who will hesitate to buy what they perceive as your last remaining jar of honey — so make sure your display are filled at all times. The display area, by the way, should be well of out the main living area unless you enjoy marital discord for its own sake. Of course, you must keep the area scrupulously clean. You are selling something that people will ingest and the will not return to you if your place of business is slovenly. Dust and mop regularly and immediately clean all the drips usually associated with bottled honey.

When honey and money change hands you and your customer have closed a deal. If you are a successful salesman you know that the closing is not your final goal. The closing is right here and now, and your goal is in the future. Every time somebody buys your product you should be asking yourself "How can I get this customer to return?" Be friendly and exude enthusiasm about your wares. Whenever someone buys treat him positively whether he has just purchased a 12 ounce bear or a 60 pound can. Never pressure anybody into buying more than he wants; he may knuckle under but you'll never see him again. For us beekeepers, what we do is a labor of love and enjoyment. Let us reflect this to the world and not downgrade our bees, our effort, or our prices. Honey is not hard to market and I wish you a sellout year every year. □

Gleanings Thanks Sidney Gross for his fine series of "Honey Marketing" articles and heartily recommends his book ***Honey Marketing: Tips For The Small Producer.***

Heads Of Grain From Different Fields

Continued from page 527

For instance barrels are used to transport oils and greases, chemicals and all types of foodstuffs. Steel is easily cleaned of most noxious materials that may have been stored in the barrel prior to use as a bee hive. Once cut in half you are done, except for frames. No angles to cut no boards to shape or nails to drive and for every barrel you have **two** hives.

Sound interesting? Let's expand on this idea not for developing countries with limited resources but for the small beekeeper in the United States. I'll venture a guess that within a short distance of all of us there is at least one barrel (remember-- two hives!) that could be recycled and be used for this type of hive. For the small beekeeper who doesn't have an extractor or who produces cut or chunk comb honey this hive seems natural. I purposely made the barrel hive pictured as simple as possible for demonstration purposes, even using the bung hole as the entrance. If the barrel was painted and had a better cover and stand it might not look too shabby for someone's backyard.

Of course this is just a preliminary project that could use some refinements but for a ten dollar investment we now have a movable frame hive that may fill a void for some beekeeper somewhere in the world, maybe even here in the United States.

If anyone would be interested in this project in greater depth, I would be most happy to correspond with them. □

A Naturalist Beekeeper

By PETER L. BORST
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I don't suppose you would have to be aware of the subtleties of nature to be a good beekeeper, but it helps. At the very least, having an understanding of the complicated interconnection between bees, flowers, and the weather adds another dimension to a fascinating pursuit. I already knew quite a bit about the natural scheme before I became interested in bees, so the connection between weather and bee behavior was easier to see as a result. I'd like to share with you some observations made from the point of view of a naturalist beekeeper, a person interested in the nature of bees.

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Heads Of Grain From Different Fields

A Guest Column

Continued from page 530

I live in coastal San Diego County, where we have an unusually mild environment, lacking extremes of cold, heat, dryness, or humidity. It's very similar to the countries around the Mediteranean Sea, so we have borrowed the name as well as many of the characteristic plants, such as rosemary, orange, pomegranate, and olive. The uniqueness of the Mediteranean climate is reflected just as obviously in the beehive as in the choice of ornamentals planted in the neighborhoods. The mildness gives the bees an opportunity to fly year round, and the wide variety of cultivated and native plants ensure that honey and pollen will be available continuously. As a result, you are apt to see two and three story hives filled with bees, storing honey and pollen in December and January.

One of the most obvious imported plants in Southern California is the eucalyptus, which is planted in every town, forming small forests in some areas. There are dozens of varieties here, but the blue gum is very common, probably because it grows so fast. Since these trees occasionally fall over, few people realize that they were once planted throughout the region as windbreaks. The problem is that seedlings transplanted after they have become fairly large will not develop deep root systems, and most eucalyptus trees begin life in nurseries.

I talked to a visitor from Australia, who was familiar with the tree in its native home. He was surprised to see our extensive use of the blue gum. He gold me that in Australia they use specific varieties for definite uses: one for furniture, another for floors, another for firewood. The blue gum is considered a useless weed, unfit for any purposes.

"You could have planted any number of types, but you picked that one!"

Actually, many varieties have been used here, which has proven to be a real boon to bees. Eucalyptus is the principal source of honey and pollen in many areas, producing reliably and abundantly. It seems as if some variety is always blooming. I remember standing beneath a particularly beautiful, pink-flowered type. I pulled down a branch to look closely at the furry flowers and got a shower of sticky nectar. I have seen red-flowered eucalyptus so thick with bumblebees that the trees seemed alive.

The real fascination from a naturalist point of view are the native plants of an area. The original flora of the coastal strip is a group of plants called, collectively, chaparral. The plants appear as a thick, dark green blanket on the hills, kept green through the rainless summer by fog and humid air from the Pacific Ocean. One of the most common shrubs in this thicket is the black-button sage, a member of the mint family. As with so many of the mints, the leaves have a pungent odor which clings to your clothes if you spend much time walking through it. The sage has a typical mint inflorescence-clusters of tiny, light blue flowers stemming from round "buttons". The individual flowers bloom for a short period of time but so many are clustered in these buttons that the bloom period may span 6-8 weeks.

From such a strongly scented shrub, comes, oddly enough, the clearest, mildest honey that I have ever eaten. When pure, it looks like champagne and has a thick, buttery taste. It makes the finest comb honey. But due to the fact that not many beekeepers try to produce comb honey and because most of the best sage-covered land is giving way to the sprawling suburbs, it's hard to find.

The chaparral plant group consists of many other shrubs, and while not many produce honey, most provide pollen, and all are interesting to a naturalist. An example is the scrub oak. This is a true oak with long, thin acorns, but it does not shed its leaves in fall, and is seldom more than a large bush. Our sumacs are honey plants like their eastern cousins, but there the resemblance ends. Instead of the long, thin, almost tropical leaves of the staghorn sumac, the western varieties have tough, oval-shaped leaves which resist drought. Our lemonade sumac produces a waxy substance in the leaves to retain moisture during summer. It bears red berries, covered with a slimy coating, that were used by native Californians to make a beverage somewhat reminiscent of lemonade.

When early settlers set about naming plants they found here, they leaned heavily on their memories of gardens in the east. While the western sages and sumacs are botanical relatives of those in Europe and the eastern U.S., the California wild buckwheat resembles buckwheat back home only in that they both have white flowers which produce honey. The wild buckwheat is a member of the coastal shrub group but it reaches its full glory on the slopes of the inland mountain ranges. It is a very round shaped shrub with tiny leaves that look like needles of a fir tree. From mid-June to fall the hills may be blanketed by the dense, snowy blossomed buckwheat. It is in areas where buckwheat dominates that staggering honey harvests are made. The honey is often sold to buyers seeking the familiar eastern buckwheat honey. Having tasted both and acquired a liking for each, I must say they are about as much alike as peaches and apricots.

The chaparral plant group is very different from other groups. It is given the name "Elfin Forest" because the overall appearance is of a forest but the "trees" seldom rise about fifteen feet. They form a dense thicket with free passage possible only on the ground or in the air above. It is an intriguing domain of rabbits, squirrels, quail, and coyotes. I often wish I could be the size of an elf and run down the tunnels and pathways in the thick brush. Aside from the dark greys and greens of the dominant members: sage, buckwheat, toyon, chamise, sumac, scrub oak, and ceanothus, there are many striking wild flowers, especially in spring. Take a walk at Torrey Pines State Park, a small pocket of protected coastal chaparral in San Diego County. You travel down sandy pathways, never far from the sound of the breaking ocean waves. In the foggy dampness you may see bright red indian paint brush, or monkeyflowers. Or see pale blue sage, and ceanothus flowers. If you're lucky you may spot the deep purples of chia sage or chinese houses. You probably won't see many of the shy animals except the birds hopping from the shrubs into the torrey pines, or the bees on the big yellow flowers of the prickly pear cactus.

Aside from plants, there is something about honeybees themselves that strikes a responsive chord in a nature lover. For instance, the marvelous harmony of the colony as they go about their affairs, guided by some unseen intelligence. This has been called by some the spirit of the hive, while others put it down to instinct. Certainly it is the most mysterious and fascinating aspect of bee behavior. Scientists have tried to isolate chemical substances that govern the order of the hive just as they have tried to synthesize human love and bottle it up as perfume. But the mystery remains. A colony demonstrates an intelligence and purpose that is not present in the individual bees. How do they decide when to initiate the departure of a swarm? It is known that a colony may prepare to swarm repeatedly but then not swarm. And while swarms usually issue when conditions are excellent for their survival, sometimes they seem to blunder out, unprotected, into the cold.

If you move a hive out of an apiary during the day, thousands of bees will return and be unable to find their own hive. But by nightfall they will have joined another hive—any hive—to avoid spending the night outside. Yet a swarm may come out, possibly with no certain destination, and hang in a bush through wind and rain, to carry out (it seems to us) an unspoken command. That's a bit like a family who leaves their comfortable home to start a new life in an unfamiliar frontier territory.

Regardless of what we call it, we cannot fail to be awed that such a complex organization could have evolved through eons of genetic trial and error, to a point of perfection. Then, it appears, the evolutionary process stopped and the organism has been duplicating unchanged ever

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Questions and Answers

Q. We are having a problem with our bees. We just bought from someone else. They seem to come out of their boxes and cling to them, hundreds of them all the time. Would you please tell us what the problem is? Lassiter Gepson, Hazel Green, Alabama.

A. The fact that your bees are clustering out on the front of the hive is actually a good sign at this time of year. To me it indicates that the queen has been active, building up a good population of bees, the health of the colony is good and that quite likely a large field force of bees has been bringing in nectar. It also tells me that the temperature is probably high, a favorable condition for nectar secretion. In other words the condition you have observed is likely to indicate a lack of a problem, rather than a serious problem. At the end of July there is little chance of swarming.

The cluster of bees on the outside are usually field bees that are temporarily idle and cannot find space in the brood chambers or supers. L. Goltz.

Q. When it comes time to introduce an additional honey super which has some frames of drawn comb — should it be placed on top of the present honey super or should it be placed between the brood chamber and the existing honey super? Also, would your answer change if the new super only contained frames with foundation? G.E. Williamson Burlington, Ontario, Canada.

A. At one time it was believed that all additional supers should be added below the super(s) already on the hive but this idea has been discounted. Most beekeepers now add the supers on top of any previous supers. The bees seem to show no preference for either position and it is certainly easier for the beekeeper to add supers in this manner. There should be no difference if the supers contained foundation. L. Goltz.

Q. I would like to know if honeybees will once in a while cap over honey that is "unripe" if they get in a hurry. Jerry Moller, Monett, Missouri.

A. I would have to say that the answer to your question is a qualified "no". Honey varies in water content even when capped and the variation may be fairly wide, from a high percent of moisture during extremely wet periods to honey below average during dry periods. It may not be so much a question of the bees being in a hurry as it is a condition of not being able to force any more moisture from the honey into an already saturated atmosphere. Perhaps as fast as the moisture is reduced the damp conditions allow water to again be absorbed, even through the cappings.

Sometimes, under conditions favorable for ripening honey in the hive, the plant source, which also determines the chemical(sugar) content of the honey, may have an effect on the "body" of the honey.

Some honey sources consistantly yield honey with the characteristics of a higher moisture content (light bodied) regardless of environmental conditions. Other honeys are almost invariably thick or heavy bodied, suggesting a lower moisture content, even before they are capped completely. Studies of the viscosity (body) of honeys of equal moisture content and of the same temperature showed considerable differences. Alfalfa, for example, was very viscous (free flowing) while sumac honey was the opposite. One researcher believed that viscosity variations were due to non-sugar materials in honey and to the colloidal materials in fine suspension. L. Goltz.

Q. It was recently stated in the column "Bee Talk" that the number of bees gathered on the inner cover of a hives gives an indication of likely swarm prevention. How many bees on the inner cover are a signal of this, and what is the connection between bees on the inner cover and swarm preparation? George Burton, Orange City, Florida.

A. That statement did not mean to suggest a direct connection between the concentration of bees on the inner cover and swarm preparation. What was intended by the statement is that the numbers of bees on the inner cover, when the inner cover hole is left open, is an indication of how strong the colony is. If the inner cover is fairly covered with bees during, and just prior to, the swarming season, then this indicates a crowded condition, and thus, a hive that is fairly likely to swarm. This gives the beekeeper an easy way to ascertain which hives are most likely to swarm. But it is far from foolproof. R. Taylor.

Q. Everyone tells me that comb honey will not keep unless placed in a freezer. Is this true? Kenneth D. Riley, Robertsville, MO.

A. There are only two reasons for putting comb honey in a freezer, neither of which has anything to do with spoilage. Comb honey will not spoil under normal conditions at room temperatures.

The first reason for deep freezing comb honey is to prevent wax worm damage. Pack the honey first, preferably in circular sections with covers, place the sections in plastic bags, and leave them in the freezer two or three days, or until the temperature goes down to near zero F. This destroys all stages of wax moth, including eggs. The plastic bags are to prevent condensation of moisture on the sections when removed from the freezer.

The other reason for deep freezing comb honey is to retard granulation. Most honey granulate most rapidly at 57 degrees F., more slowly at temperatures above or below that. So any comb honey left unsold at the end of the summer can be kept over until the following year in a freezer. R. Taylor.

Q. What is the best way to remove bees from a full super? Wil Clayton, Benedict, Nebraska 68316.

A. For the backyard beekeeper, the best way is with two-way bee escapes and escape screens, as described in the September "Bee Talk." It is safe, easy and effective, if done right. R. Taylor.

Q. When is the best time to gather bee pollen? Can you make your own traps? Do you have to take the pollen out every day? How do you dry it? Andy S. Miller, Dundee, Ohio.

A. The best time is the latter part of the summer, when the main honey flows are past and the bees no longer need much pollen for brood rearing. To make your own traps, you should get a professionally made one and use it as a pattern. The mesh for trapping the pollen should be five per inch, which is not easy to find. Pollen should preferably be removed from the traps every day, and must never be allowed to become damp. It can be dried in trays in a warm room or attic. Then put it in airtight containers or bags, store it in a freezer for a few days to destroy any tiny wax worms. After that it should keep indefinitely if kept dry. R. Taylor.

Q. I have a bulletin on beekeeping which says "Some beekeepers prefer to winter their bees with the shallow super of honey below the brood chamber." But bees moving upwards in winter run out of food before spring, or is my thinking wrong? Also, should you reverse hive bodies in the spring? Marshall Danielson, Pittsfield, PA.

A. It makes no sense to winter bees with the food chamber (super of honey) **below** the brood chamber, for exactly the reason you give. Bees always store their honey

Continued on page 535

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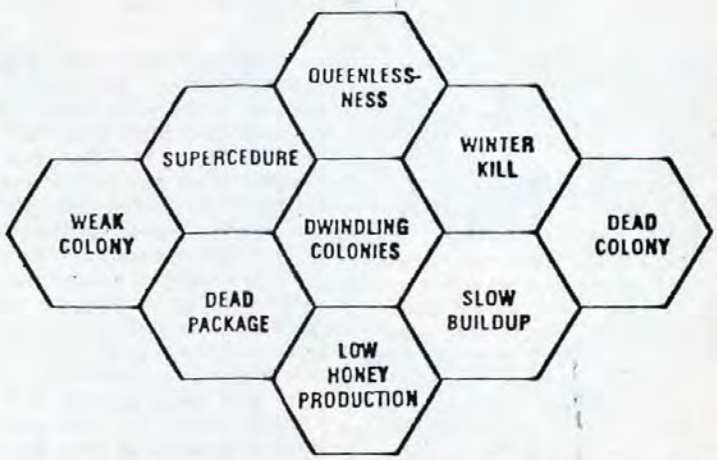

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By P.F. THURBER
5522 127th Ave. N.E.
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Removing Honey From Cappings & Supers

Maybe you are more lucky than I am but a hobbyist, I think, rarely had unlimited storage space for honey supers after the season is over, and he generally does have a problem with cappings. You say that commercial beekeepers often and probably usually put their supers away wet? This may not create a problem for them, but for a city suburban hobbyist wet supers, I think, immediately means INSTANT ANTS....hoards of the darn things! What to do about them. I don't know for sure because I have a fear that an insecticide that will kill ants will probably get my bees too and that problem I don't need. Anyway I do it the hard way. At night- fall I go out with my sticky supers, pull off the lid of a strong hive, add an inner cover with the escape hole open, put on the equivalent of 3 deep wet supers, put the lid back on, and go to bed. I put the supers on at near dark because I do not want robbing to start, and to see I always check the brood is healthy before I pull honey for a hive. Intermixing supers from diseased hives in your operation is quick and total disaster.

I don't believe how fast bees come rushing up through the escape hole and onto the sticky supers. One night years ago we stayed up a bit later than usual to watch a TV program, and while my wife walked the dogs before putting them in their bed, I took my trusty red lensed flashlight and peeked under the lid. The sticky supers were alive with bees yet the next night there was hardly a bee up above the inner cover when I pulled off the now cleaned supers and added more sticky ones. Bee cleaned supers do not seem to attract ants at least in this climate so that problem was solved, but do not try to do this trick on weak hives. You need lots of bees to clean supers!

The next problem was the cappings. I could drain them in strainers or in panty hose hung on hooks in the basement, but I felt that the capping honey was probably picking up dust and possibly lint from the clothes dryer. I tried to speed up the straining through the panty hose by using heat lamps. That lasted about ten seconds after my wife acidly asked if I was trying to burn down the house. So I thought since the swinging baskets of my Woodman four frame extractor lifted out for cleaning I could and so did make capping baskets for the extractor. Chopped cappings troweled into the baskets and spun did yield a surprising amount of honey and left the cappings only damp to the touch. (These baskets were shown and discussed in a *Gleanings* article some time ago.

Although only damp, none-the-less the cappings had a good deal of honey left in them. In the solar melter the honey was burned and could only, I felt be safely used as Spring (not Fall) bee feed. In the water batch wax melters a fair amount of honey was wasted. I thought about an article I had read about how people washed their cappings and used the wash water to make vinegar or mead (honey wine). That is a solution for sure, but what would we do with the vinegar or wine because we use so little of each. Finally I talked to my then boss, the Chief Apiary Inspector, and he said make baskets that fit inside a super, and let the bees remove the honey from the cappings. Hey, that was it! I hurried home and made a box with the lower sides and bottom made of one eighth inch galvanized hardware cloth. I made it about six inches deep, filled it with cappings, put it up on very short legs on an inner cover, put a deep super around it and put on the lid. A week later there were still thousands of bees in cappings. A week later still many bees. Heck, it looked like they were going to winter up there and that would never do. I removed the box late in an afternoon, laid a large peice of plywood under the front of the hive and carefully removed the cappings a little at a time because, as I suspected, there were small pockets of bees in cavities in the cappings. They had even reworked some of the wax into weird configurations. Finally I got all the bees out of the cappings which were by then completely dry and shooed them into the hive and swept up the cappings. Well, I had learned something. Six inches of cappings is just too deep. The bees can neither clean it fast or efficiently. I though some more. At my office I had had a stack of low boxes: one for incoming mail, one for out going mail, and a hold box. That might work so I got some low grade one by two lumber and made bottomless boxes that would fit loosely inside a super. Then I tacked or stapled on eighth inch hardware cloth on the bottom of each box. To provide legs I drone three one half inch roofing nails part way into the bottom of the box. I though about half inch legs would be about right and they were. I filled each box with loosely piled cappings. The first box I set on top of the inner cover (with escape hole open), the second box I set on top of the first box, and then the third box set on the top of the second box. I surrounded all the boxes with a super and put on the lid. The bees came up. Many hung on the screens and licked honey from the cappings in contact with the screens, and many, I suppose most, went up on top and after they got the top of the cappings cleaned burrowed down and got the rest.

At any rate the got all the cappings reduced to a powder or flake form which was completely dry in just four or five days. I cannot say how much honey they recovered, but it is my impression that the damp cappings still contained over 50% honey. So since I had about eight gallons of cappings I suppose the bees recovered four gallons of honey which would have been too much additional winter stores for one hive so after three baskets were cleaned by one hive, I switched them to a second and then a third hive. Well I guess that is it, but again let me remind you you can only do something like this with disease free cappings! I should also mention a sad incident one chap decided that he would put cappings out for bees to clean rather than put them enclosed on top of a hive. The bees went into a frenzy. People nearby got stung. Robbing got started and he lost two or three hives out of, I believe, an original count of 10 hives. Incidentally, you can start a disaster like that putting strainers, extractors, and settling tanks out for the bees to clean too. Need I say DON'T DO IT!□

Not Enough Magic

Adam, the old beekeeper,
once told me
when someone dies
you must tap the hives
three times and say aloud
"So-and-So is dead."
Then no one else you love
will die within the year.

When Margaret died
I performed the required ritual
That day the bees must have
been busy elsewhere.

June A. Zwickey
617 Kensington Dr. #1
Appleton, WI 54911

Questions and Answers

Continued from page 532

above the brood nest, and the beekeeper should adhere to that pattern.

As for reversing hive bodies in the spring, some beekeepers do this to remove congested conditions in the hive and delay swarming. It is not necessary, however, and of doubtful value anyway. Reversing hive bodies breaks the brood nest in an unnatural way, is extra work, and not particularly effective in preventing swarming. R. Taylor.

Q. I made up a nuc box with three frames of brood and partly sealed honey, and fed it sugar syrup. I am certain I did not get the queen. Ten days later there were absolutely no eggs or larvae and the queen was the ugliest I have ever seen, small and with a head like drone. What did I do wrong? Louie O. Hartzell, Osceola, IN.

A. I think your nuc got robbed out by other colonies, probably by the colony you had taken the combs from. That honey, plus the sugar syrup, was robber bait. the nuc was thus totally demoralized. A nucleus colony is virtually defenseless against robbers, and should never be fed sugar syrup.

From your description it appears you wanted the nucleus colony to raise its own queen. Queens should be reared only in very populous colonies, for large numbers of young bees are necessary for the royal jelly needed to rear queens. R. Taylor.

Heads Of Grain From Different Fields

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since. Maybe that is what makes evolution so hard to comprehend, that an organism could change so much — from solitary bees, through semi-social bees like bumblebees, to the incredible honeybee colony, and then stop. I feel that evolution represents a tug of war between the forces of variation and duplication. In some organisms, one or the other seems to be in control. For example, fossil records show many insects have gone through millions of generations without perceptible variation, while other animals, such as the dog family, seem to have always varied, even before domestication intensified this quality. So we see that evolution may produce an organism by varying and then copy the results without further change.

Humans and honeybees have a lot in common. Neither one is simple nor easy to understand. Keeping bees, therefore, is not simple. It is made complicated by the bees' puzzling patterns of behavior that seem at the same time fixed and improvised. The beekeeper must learn their habits well and then he too, must improvise. What may work this season might be useless next year. And although both organisms are complex, they are very different. Too many people try to relate to bees as if the colony was a person with human characters. A beehive is not a factory with a day shift, night shift, and union coffee breaks. It is a painstakingly balanced, harmonious unit, which can fall into disarray at the loss of the most important member, the queen.

I like to think that bees will remain on the face of the earth forever, thanks to the combined efforts of the two groups of beekeepers: the commercial ones, interested in a healthy population of bees protected from the onslaught of pesticides, and the naturalists, who have bees for the contact with the immense and mysterious world of nature of which we and they are a small part.□

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Meeting With Secretary Of Agriculture Block

A number of persons from the beekeeping industry representing honey producers, packers, bee supply dealers, and others met with Secretary of Agriculture John Block in Washington on July 29. The group was accompanied by Senator Larry Pressler from South Dakota who had arranged the meeting. In many ways the outcome was not satisfactory, but the meeting did serve to clarify the administration's position concerning beekeeping and the price support program for honey.

If the Secretary of Agriculture had his way, there would be not price support program or any other industry protection. The Secretary, like the President, is a free trader. There are many things in favor of free trade. The primary one is that those who can produce a commodity for the least amount of money will dominate the market, and as a result, food will be cheaper. The Secretary said at one point, "There is a lesson to be learned" if Chinese beekeepers can produce honey for less than beekeepers in the United States.

There are also reasons why the government has and will continue to support the price of certain commodities. For example, the legislation concerning the support price for milk says there shall be such a program, "in order to assure an adequate supply of pure and wholesome milk to meet current needs." In other words, the writers of that legislation wanted to make sure that the children of America had all the milk they needed for good health.

There are also sound reasons for supporting the price of honey. In our discussions with the Secretary, he said that the users of bees for pollination should be those who pay to support the industry. The thought that users should pay for the services they receive is one that permeates government at all levels today and, again, sounds good on the surface. However, to make such a statement concerning the beekeeping industry indicates a profound lack of knowledge about pollination and how it is done in this country. It is obvious to me that the beekeeping industry has not done a good job of telling people where and how honey bees are used. This is an educational process, and it is one that must be repeated.

Pollination and Wildlife

The wildlife of this country depends upon fruits, berries, nuts, and seeds for existence. It should be remembered that before the settlement of North America by Europeans, the pollination of these crops was done by flies, beetles, and twig and

By ROGER A. MORSE
Department of Entomology
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ground nesting bees. However in the past several hundred years, wildlife from other parts of the world has been introduced into the United States. These animals use foods that are often not native to this country. In addition, several flowering plants have been introduced. Solitary and ground nesting bees are abundant in many areas; in fact, I have found that in parts of New York State they outnumber honey bees two to one. However, for the most part these bees are small insects are not capable of pollinating many of the introduced plants, especially certain clovers with large flowers. They are also not sufficiently abundant or large enough to pollinate apples and many other fruits. The wildlife of the United States is a great user of the pollination services, and there is no way beekeepers can collect money for this service.

Pollination and Home Gardens

Gardening is a popular hobby and an important producer of food that helps to reduce grocery expenses in the United States. Many of the crops grown in home gardens do not require pollination, but others such as squash, cucumbers, melons, pumpkins, and a host of fruits, including apples, pears, blackberries, raspberries, strawberries, either require or benefit from adequate pollination. A community that may have one beekeeper, probably has 50 or 100 home gardeners. As in the pollination of crops for wildlife, certain other insects play a role in pollination but honey bees are the most important. It should be remembered too that many of our better garden varieties are man-made plants (man-selected) and require an insect as large as a honey bee for adequate pollination. Again, there is no way that a beekeeper can assess or collect a fee from these users of his bees in his community.

Pollination in Rural America

As one drives across the farmlands of our country and looks for apiaries, one will be found every two, three, or four miles in better farm country. This is often not evident because beekeepers hide their apiaries in order to reduce vandalism. If the apiaries are two miles apart, then the bees are foraging over a minimum of about four square miles, whereas if they are three or four miles apart, the area is as large as 9 or 16 square miles. Recent research has shown that it is not uncommon for honey bees to fly five or six miles for food. As in urban America, these bees pollinate fruits and vegetables in home gardens; however, by far the most important role they play is in the pollination of clovers in permanent pastures. We don't pasture dairy cows as we once did in America, but we do pasture dry cows and heifers, beef cattle, sheep, goats, and horses. Permanent pastures exist in many parts of the country because there is reseeding of the clovers and plants such as birdsfoot trefoil. Birdsfoot trefoil is an example of an introduced European plant that requires an insect as large as the honey bee to accomplish pollination. When bees are foraging over an area of many square miles, it is again obvious that user fees will not be collected.

Roadside Plantings

In New York State the Department of Transportation requires that roadside plantings include a certain amount of birdsfoot trefoil. This is because this plant, once established, is permanent. It reseeds itself, and because of its deep root system, aids in erosion control. In Pennsylvania, crown vetch is used, and I presume other states have similar requirements for obvious reasons. Again, these plantings would not be permanent without adequate pollination and it is obvious that state departments of transportation are not in a position to reimburse beekeepers.

Pollination in Intense Agricultural Systems

In many places in the United States, user fees are paid for pollination. The most notable examples are apples across the northern United States, almonds in California, alfalfa in the western states, blueberries in Michigan, Maine, New Jersey and North Carolina, cucumbers in several states, and a host of other crops. The article by Dr. Everett Oertel in the March 1983 issue of *American Bee Journal* summarizes the rental of honey bee colonies by beekeepers in the United States. The greatest number of colonies is rented in California followed by the states of Washington, Michigan, New York, Florida. However, the number of colonies for which a user fee is paid is only slightly over 10% of the number of colonies found in the whole country.

Most Pollination Is Free

What must be emphasized is that most pollination service is free. It has traditionally been this way and will remain so for good and ample reasons.

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Meeting With Secretary Block

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Problems With The Current Price Support Program

It is clear that the current price support program is not working. The fault does not lie with the beekeepers or the beekeeping industry but the fact that Apiculture is changing worldwide. Our price support program is underwriting the price of honey in Canada, Mexico, Argentina, China and every other honey-producing country on earth; that was not the intention of the original legislation.

At present there is a 15-20 cents per pound spread between the price being paid by honey packers and the price support program price being paid by the Federal Government for honey that will be taken over by the government from the 1983 crop will approach 100 million pounds. Obviously, the program must be redesigned.

If the U.S. Department of Agriculture fails to act to change the present price support legislation, then the industry and the Congress must provide the solution. □

Capping The News

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lead content in roadside plants had a direct relationship to the tetraethyl lead emmissions from vehicles.

Later studies in the United States and Britain confirmed Warren's theory and led to the production of unleaded gasoline.

Warren theorized the next step would be to prove that naturally occuring minerals could be found by studying the vegetation.

British research had suggested that some diseases were transmitted by trace elements in the reproductive systems of plants and animals.

Warren's research turned to pollen, part of plant reproduction sytems.

His research was assisted by development of a technique known as flameless atomic absorption spectrphotometry which meant samples of pollen could be broken down to parts of a million instead of a previous system allowing only parts a billion.

Warren tried his theory with pollen collected from an area near a B.C. smelter. He found the pollen samples had high concentrations of trace elements of zinc and lead.

Then he persuaded an apiarist to move one of his hives close to a molybdenum mine. The analysis showed heavy concentrations of molybdenum in the pollen.

To keep the experiments strictly scientific, Warren never told his assistants where the pollen samples came from.

Even so the research panned out.

"The pollen samples from a mine area where there were known gold and silver deposits gave us a perfect picture of the deposits," one assistant said.

At this stage Warren approached Cominco and Placer.

"The best part of using bees to collect pollen is that they are relatively indiscriminate feeders so they bring back pollen from a number of plants in a square mile or so," said a geologist with Placer. And bees with their high organization travel to one specific area to collect pollen. This means the area can be pinpointed with little difficulty.

If bees eventually are used in gold mining it won't be the first time the insect world has been used to locate the precious metal.

In southern Africa, early miners demolished termite hills in their search for gold. The termites are voracious miners in their collecting of sub-soil to build their mounds.

The miners would search for traces of gold in the termite hills to see if the termites had crossed gold deposits in their digging.

Of course, the pollen collected by bees probably will never be used as the sole test to determining placement of a mine. What it will do is give geologists more confidence in recommending a mine when the pollen tests are used in conjunction with other geological work.

It Must Have Made For An Interesting Curling Match

Four million bees recently spent the night in a curling rink in Dugald, Manitoba.

Canadian beekeeper Howard Smith and several of his neighbors transported the bees and their nests to the curling club in a desperate effort to save them from aerial spraying of the pesticide malathion.

The Manitoba government had ordered the spraying after declaring a medical emergency because of the rapid increase in numbers of the mosquito culex tarsalis, which carries western equine encephalitis, or sleeping sickness, from chickens and birds to people and horses.

With the roof over their heads, the bees were unaffected by the pesticide which was sprayed from DC-6 aircraft.

Smith estimated he had lost 150,000 bees to the spray before hitting on the idea of moving the rest to the curling rink.

Dr. Cam Jay of the University of Maitboa's entomology department said the evacuation of Smith's bees was the first such large-scale operation he's known. It was also observed by government officials who wanted to see its effectiveness.

Smith's bees were kept in the curling rink, which was closed for the summer, until the fields where they normally live were checked for toxicity.

Earlier in the spraying program, beekeepers said they could scoop up dead bees by the shovel full after the spray planes flew over.

Government officials confirmed that a monitoring program showed the malathion killed up to 100% of the bees exposed to it.

One southern Manitoba beekeeper said he found half his bees dead when we went to collect honey the day after the low-flying spray planes flew over his apiaries.

Provincial government apiarist Don Nixon said the insecticide showed "more consistency and higher toxicity" to bees than Baygon, the chemical used in Mantitoba's last battle against the mosquitoes in 1981.

This year's spray progam came at the height of the honey season.

Dixon said that in various locations, almost all the bees had died in 12 hours after being exposed to the insecticide.

"It's just unbelievable," beekeeper Ronald Pay said after he went to his hives. "You could scoop the dead ones up by the shovel full."

Pay has 125 hives just outside the Winnipeg city limits.

Steve Olnick, president of the Manitoba Beekeepers Association, said the province has budgeted $200,000 this year — almost double the $110,000 it paid in 1981 — to compensate beekeepers for their losses.

Dixon said all beekeepers in the province are eligible for compensation, and Olnick said the government "has bent over backwards" to design a compensation program which will fairly reimburse the keepers.

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The Aebis, Beekeepers Extraordinaire

By LEONORE M. BRAVO
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As we were approaching Santa Cruz on the way home from speaking at the Monterey Beekeepers Association, it occured to me that it would be interesting to meet Ormond and Harry Aebi, pronounced abby, not a-bee as we had been doing. On the basis of reports brought back by others who had visited them I tried at various times to get them to speak at one of our area wide bee days. But Ormond's answer was that they no longer travelled to or in large congested freeway sytems such as approach San Francisco.

Finding his address in the telephone directory we went into Santa Cruz looking for 17th street, whereas we would have done better coming from the South if we had taken the offramp for Capitola which would have brought us to 17th street and very near to the Aebi's home apiary, workshop and honey packing house. We arrived just about 1 p.m. on a Friday which happens to be the time that they set aside for visitors, along with Saturdays. Ormond arrived just as we did with groceries for the weekend and just had time to put them away before several other visitors arrived, some of whom we had seen the night before in Monterey. Readers in the Carmel-Monterey area can write to Mark Starr, P.O. Box 1645, Carmel, CA 93921 for information about that organization.

The best way that I can describe the Aebis, their home, their beehives, and their whole operation, is **natural.** They live in a charming little Santa Cruz bungalow of Victorian aspects which must have been built in the early 1900's and reamains unaltered. Their walls are covered with a collection of popular and good amateur fine art depicting nature for the most part. Several stuffed animals adorn the tops of cabinets and the whole decor bespeaks the home of a naturalist, which essentially is what Ormond is. He just happens to have turned his attention and powers of observation to bees.

Their furniture is antique not because they are antique collectors, but because like me, they like their old stuff. Besides, like the small wood-burning stove in the library-study-sitting room, it's comfortable. The one bit of high tech in the midst of all of that is Ormond's typewriter which sat on a desk far better organized than mine is! There he wrote his *Art And Adventure Of Beekeeping* and *Mastering The Art Of Beekeeping,* Volume 2. And there he continues to write, with a childrens' book underway.

The house is on a 50 ft. lot with a driveway down one side. Eight 10-frame unpainted redwood hives, with stacks of medium depth supers over a single brood chamber, were lined up along the outside wall of the other side of the house. As the afternoon wore on there were quite a few visitors in the area behind the house and adjacent to those hives with the bees flying peacefully around them as they came and went.

Harry and Ormond Aebi.

In *Mastering The Art Of Beekeeping, Volume 2,* the Aebis make an excellent case for unpainted redwood or pine beehives in a **mild climate** such as coastal California. Among the advantages is that the wood weathers to a pleasing brown which is attractive and natural to bees, and the pores of the wood breathe, allowing excess moisture to pass through at the height of the nectar flow. They alledge that such hives absorb more heat, an advantage in the cool coastal area.

It was a warm afternoon and the fragrance of the redwood, not only of the hives, but from the other storage and work buildings reminded me of the house where I was born in Vallejo, California which was nearly identical design to theirs and had similar redwood out structures. I can recall vividly the combined fragrance of sun on redwood and the ripe blackberries that abounded there.

Whereas the house no doubt was standing pretty much by itself out in the country in the beginning, Capitola and Santa Cruz come together there now and the place is entirely built up. Adjoining the property on one side is a nursery school, and abutting it at the rear is a middle school. Directly in front of the house is a bus stop. I noticed bees passing some people, mostly middle school youngsters without incident as we were leaving. Ormond said that the nursery school teachers bring children over five or six at a time to sit on his bench and watch the bees go by. What a wonderful nature study lesson!

Now all of this may sound a little unbelievable to anyone who doesn't have the instincts of a naturalist. But as any naturalist will tell you, if respected and treated properly most any animal can be lived with, except for the well known renegades among species. Including man! Ormond has a chapter in *Mastering The Art Of Beekeeping,* Volume 2 on how to tame honeybees. His directions should help keep one's bees gentle.

As Louis Dubay and I sat inside visiting with Ormond, his father, Harry, stood outside answering questions and generally visiting with those assembled. Meanwhile Ormond fielded the telephone calls from people asking directions as they attempted to hive swarms and solve other beekeeping problems.

After exchanging pleasantries and bits of useful data of one kind and another I offered to bring in some photos of bees and some bee drawings of Louis' that we had on exhibit along with our stamp and label collection and our collection of honey from around the U.S. and the world. We carry these when doing a program titled "Where the bees will take you". As I came back in, all the people outside came in and Ormond brought out a jar of Blueberry honey and one of Goldenrod that he had just received from Michigan and ended up giving me a sample of each for our collection.

Like the place, the spirit of honey tasting reminded me of my childhood when my grandparents used to drive out to the Napa Valley in the early 20's in an old touring car to the fruit ranches of friends who also grew grapes and produced wine. In those days there were two kinds, red and white. The party would descend out of the heat into a cool cellar filled with big casks of wine, from the ceiling of which hung homemade salamis curing.

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The Aebis

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The host would cut down a salami and give each child present a large chunk to chew on while the adults compared that year's vintage with last year's and that of some other notable years that they could recall.

The honey tasting done, we bought a copy of the Aebi's book cited above which is full of excellent suggestions for making the hobbyist's experience more pleasant, both for himself/herself and the bees, as well as more successful and productive. No matter what such a beekeeper may know about beekeeping, this book adds a unique dimension and ought to inspire hobbyists to perfom systematic observations of their bees and make adequate records of them. Such is the basis of a true knowledge of bee behavior, the basis of good beekeeping.

As we drove up the relatively unpopulated stretch of Highway along the beautiful California coast I mused how rewarding our trip to the Monterey beekeepers had been and how the visit to the Aebis had put me back sixty and more years in time when all of California had more grassy hills full of wildflowers and animals than it had houses and people. The pace of life was slow and the people gentle. Regardless of having the discipline to write and publish books and to carry on a successful bee and honey business the Aebis reminded me, pleasantly, of all of that.□

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But Pay said he received his 1981 compensation cheque only six weeks before the latest spraying and the government money did not cover his losses.

"You can't compensate for a year's worth of labor — you can't calculate that," he said.

Pay said he expected to receive $7,500 to 8,000 for his 1981 losses but got only $3,000.

Dixon conceded the payments for 1981 were slow, but the compensation program now would move much faster.

In the 1981 outbreak of western equine encephalitis 25 cases were reported and two people died. There have been no confirmed cases in Manitoba this year.□

***Editors Note:**

We thank Alan Harman, Toronto, Canada for the above two news items.

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The Sting: Its Harm To Public Relations

Don Bieber, Fort Wayne, IN, recently sent us a news clipping of a Fort Wayne man who died after having accidently swallowed a stinging insect that had flown into his can of beer. Swelling, caused by the sting, caused suffocation. Obviously, incidents such as this do no good for the public image of bees and beekeepers. Although little can be done to prevent freakish accidents, more can be done in insuring that reports are made in an objective, factual manner. The article, referred to above, makes no mention of the type of bee involved. Quite likely, it is impossible to determine that. However, in many similar cases, it is assumed by authorities or reporters that a bee is a bee. Those of us who know better have the responsibility of enforcing the fact that yellow jackets, so often found in picnic areas or where persons are eating and drinking outside, are insects of dramatically different behaviors than domestic honeybees. Consequently, the blame that ultimatley falls on the beekeeper, often was instigated by other types of stinging insects. To paraphrase Gertrude Stein: "a rose is a rose is a rose...but a bee ain't a bee ain't a honeybee...necessarily."

Home IPM News Released

A new and unique newsletter, called **Home IPM News,** has been introduced to the gardening public by Editor Larry Connor, Ph.D., of Cheshire, Connecticut.

Home IPM News is a home gardening newsletter which strives to reduce pesticide use around the home by using Integrated Pest Management (IPM) concepts. IPM uses a combination of biological, cultural, genetic, and natural means of controlling insect, disease and weed pests, using chemical control means in a conservative manner whenever possible.

Timely pest control advice will reach subscribers by first class mail twice each month from April through September, and monthly from October through March. Introductory subscriptions are $15 for 18 issues.

Dr. Connor is well qualified to produce a newsletter of this type. A graduate of Michigan State University with a doctorate in Entomology, he served as Extension Entomologist at Ohio State University where he prepared numerous extension materials, including two newsletters, in the home pest control and beekeeping areas. Presently an instructor at the Waterbury Branch of the University of Connecticut, Connor also holds a Commercial Pesticide Applicators Supervisory License from the Connecticut Department of Environmental Protection.

Homeowners interested in reducing pest problems while reducing chemical insecticide use will find **Home IPM News** of value. For a sample copy, write **Home IPM News,** Dr. Larry Connor, Editor, P.O. Box 817, Cheshire, Connecticut 06410.

Country Of Origin Labeling To Go Into Effect

The U.S. Custom Service's new regulations on "Country of origin" labeling will become effective October 24, 1983. Honey is only one of many products effected by these new regulations and according to the July 26th Federal Register notice, 1250 comments were received, of which 1200 were in favor of the new requirements.

How Sweet It Is (?)

According to *Nouvelle Cuisine News,* sugar consumption is expected to decrease worldwide by 10 million tons because of Aspartame (artificial sweetener) use, and much of the sugar in 20 years should be used for power alcohol. It may be that Idaho beet sugar farmers and Louisianna cane sugar producers will have to find other crops, as sugar is already costing American consumers $6 billion per year of overpayment above international prices and Aspartame should be cheaper than sugar in 1985 on a sweetness basis. It is intersting to speculate on how this will influence honey sales. Sugar prices could lower significantly until production levels are adjusted.

Experimenting With Jumbo Frames Without The Use of Jumbo Hives

By J. IANNUZZI
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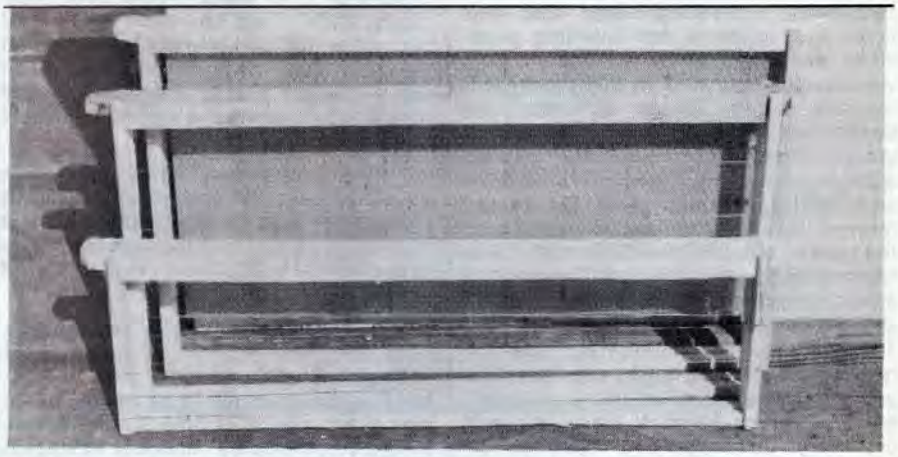
Gauging the success of a single-box apiculture with the employment of two different frame sizes.

Introduction

Not much has been written about Jumbo hives in recent bee literature. A search of *Gleanings* for the past several years has turned up nil while in the past 15 *American Bee Journal (ABJ)* has published exactly one article[1] by an Ohio apiarist who framed his piece around responses to a letter-inquiry about the use of Jumbo depth and Modified Dadant hives.

Oldtimers offer nuggets of wisdom. Writing in 1973, Kelley zeroed in on their major disadvantage: ". . . too heavy for the average man to lift by himself while the deep frames (11¼ inch) cause much more sagging of the combs and the production of more drone comb."[2] Root made the same observation about the large hive, citing the Modified Dadant as being "very popular in some sections of the country" although "95% of the honey producers of the country are using hives of Langstroth dimensions."[3] Charles Dadant and C.P. Dadant were the leading defenders of the Jumbos, the latter of whom often quoted the Father of American Beekeeping in his preference for the large brood nest.[4] (Incidentally, the original odd-size Dadant became the Modified Dadant introduced in 1920.) Fifty-year Miller experimented with two Jumbo hives (equivalent to a 12-frame Langstroth) for the purposes of diminishing "If not entirely (to) suppress swarming" only to report that the next summer "the very first colony to send out a swarm was one of these Jumbo hives!"[5] But away back in 1853 the discoverer of bee space was cautioning against the use of the large hive for small swarms since "they will be unable to concentrate all their animal heat so as to work to the best advantage, and will often become discouraged, and abandon their hive" as he pushed for the adoption of his own "improved hive," just introduced, because its size was "adapted to the natural instincts of the bee."[6] G.H. Cale, however, summarized the best argument for the use of the large hive—more brood space—when he wrote:

It is now generally accepted that a single 10-frame Langstroth hive body is not large enough to accomodate the brood of a good queen so two bodies are employed together in what is called the two-story Langstroth hive. Sometimes a third body is added for additional brood expansion or for storage of honey and pollen as a food reserved during the winter. Some beekeepers prefer the Modified Dadant hive with its deeper brood chamber, and accommodate the egg laying of superior queens by providing a super on top which also serves as a food chamber in winter.‡



1. New-style Jumbo frame compared with standard deep and standard shallow ones.

Litany of Different Hives Sizes

The various size boxes and frames used in modern apiculture tend to infuriate some beemen for many obvious reasons even though long ago the author settled for the Langstroth deep (9¾″) as the brood chamber and the shallow super (5¾″) as his standard for nectar collection. In later years, as he began manufacturing his own equipment, including frames, he found it increasingly difficult to acquire easily scrap lumber for the deeps because a 10-inch board (actually 9½″) was too narrow and the next size, 12 inches, permitted too much waste. Why not construct only shallows, put two together with a single frame for brood purposes, and operate thus using only one size box for the whole operation? BINGO, the idea for the JUMBO frames minus the JUMBO box was born!

Background

An original idea? As any oldtime Johnny Beeswax will tell you, there is nothing new under the apian old sol. Moses Quinby had a Jumbo hive as does Dadant today (called "Modified"), with both using the Langstroth frame length (17⅝″)/but with greater frame depths (11¼ inches versus the standard 9⅛). Both, therefore, require deeper boxes. The Quinby Jumbo operates with 10 frames whereas the other has one more.[8] The writer's system, however, of a new Jumbo frame 11 inches deep does not call for the construction of a new holding box (unlike Dadant and Quinby) because it employs two standard shallows simply placed one on top the other, equalling a depth of 11½ inches.

Question Marks

A number of queries naturally popped up. Would the system work better than the current operation; that is, would the angels of agriculture winter more readily in a single Jumbo framer than in two standard deeps, with stores in the former (82#) being considerably less than the latter (120#)? Would the double shallows become a nagging nuisance in operation by separating easily? And most important, would the new operation produce less swarming and the same amount—or more honey—than double deeps?

The Jumbo-Frame In Practice

On April 2, 1982, the author put his newly manufactured Jumbo frames (see photo) into his double shallows. Each had eight sheets of patched together foundation—a distinct disadvantage over the readily available commercial sizes—and two frames of comb, cut from shallows and tied into position. They were started on top of two strong colonies. By May 30, the one double-shallow Jumbo-framer (DSJF) was occupying the lowest position on its surrogate hive as was the second experimental, each topped with a standard deep. At extraction time on the ides of July, the first yielded 23.5 pounds of honey and the second six pounds more, both from single shallow supers above queen excluders. Divorced from their deeps serving as second brood chambers, they were forced to operate alone, each given a shallow super for clean-out purposes.

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Jumbo Frames

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Subsequent Examinations

An inspection on Columbus Day showed that DSJF-1 had brood on two frames only, equivalent to the size of a man's palm, while the pollen and nectar present was equal to about four full frames, some 30 pounds in all. The only super was empty. Its sister was found to be doubly strong with four frames of nectar! Because of the poor condition of the first hive, the experimenter stole some brood and nectar from its buddy in order to equalize the two of them.

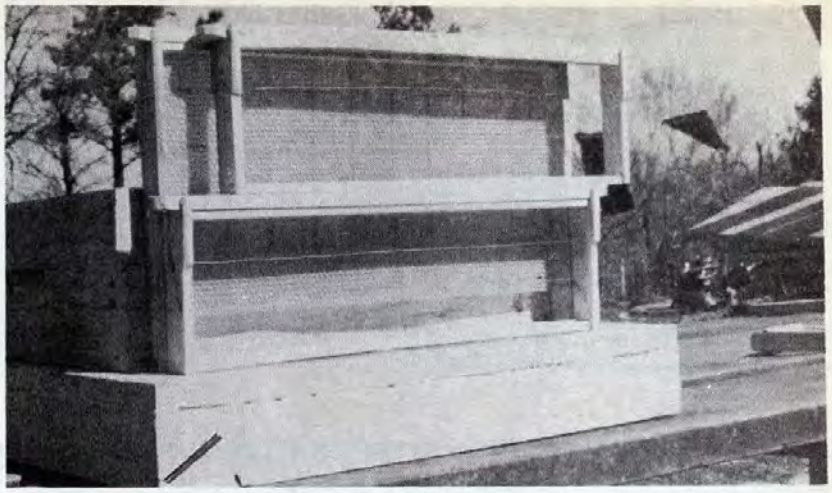
A 60 second flight arrival count in late November revealed that the two new style hives were the weakest in the apiary containing 12 other standard double-brooded colonies. Another examination of March 3, 1983 confirmed the November data.

Conclusions

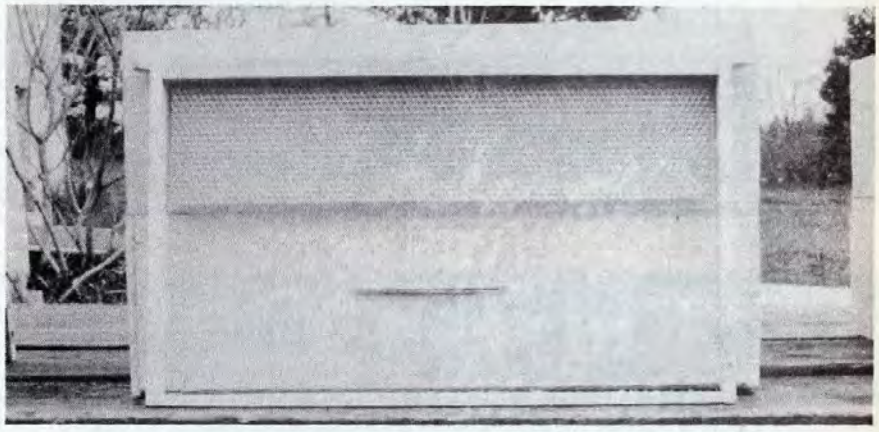
Maniupulation was no more cumbersome than the standard deeps, probably only because the new styles were not operating at full capacity. No final comment can be made about honey production because of the limited time involved in starting from scratch. It was gratifying to see that one of the experimental frame hives was not involved in the unusual fall honeyflow, as were the other 12. There was no swarming, in either the old or new style. As the wintering, it is patent that the double-brooded regulars with their greater stores fared much better than the experimentals with their limited supplies which had never peaked at their theoretical 82 pounds each. The next honeyflow, however, when the double-shallow Jumbo-framers are operating alone—as well as the next brumal season—would really be a more valid test for the experiment with Jumbo frames without Jumbo boxes!

Footnotes

1. Jack Kuehn, "More on Large Hives," *American Bee Journal (ABJ),* October 1982, pp. 681-682.
2. Walter T. Kelley, *How to Keep Bees and Sell Honey,* 7th edition, p. 28.
3. A.I. Root, *ABC & XYZ Of Bee Culture,* 35th edition, pp. 342-343.
4. H.C. Dadant in *The Hive and the Honey Bee (HHB),* p. 220.
5. C.C. Miller, *Fifty Years Among The Bees,* p. 193.
6. L.L. Langstroth, *Langstroth on the Hive and the Honey-Bee,* 1977, Root Edition, p. 88.
7. G.H. Cale in HHB, p. 208.
8. H.C. Dadant, *op. cit.,* p. 221.



2. New-style Jumbo frame equals two standard shallows.



3. New-style Jumbo frame ready for insertion in two shallow supers behind it.

4. New-style Jumbo frame in operation without the use of Jumbo hive body. Note use of queen excluder between supers and brood chamber.

Wintering The Honeybee Colony Part III

By T.S.K. JOHANNSON
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Colonies overwintered in Germany without ventilation from November through mid-March had moldy combs, little brood and the unsealed honey was on very thin; on the other hand, there were no signs of dysentery, the bee's abdomens were not swollen, and the number of dead bees was normal[85]. That the honey had absorbed water vapor released by the bees would serve as a buffer to reduce the humidity within the cluster, and would provide some of the necessary dilution of the honey before ingestion by the bees without their having to leave the hive to collect water. J. Dzierzon observed the need for water during the winter to dissolve crystallized honey or candy supplied by the beekeeper, and suggested that a certain amount of moisture "appears rather to contribute to the health of the bees than to be injurious". One colony fed candied honey in October took up three combs full of water before the uproar and search for water ceased. Dzierzon suggested that the condensation of water during the winter might help to avoid the problems inherent in hives that are too dry[86].

It has been found that in mild winters poor ventilation is harmful, and with minimal insulation very free ventilation is necessary to avoid condensation[87]. Reducing the entrances during a mild winter in England resulted in more dead colonies at an exposed site, and the surviving colonies were smaller in April. Colonies with either open or reduced entrances were damper at a low, sheltered site indicating that location may have priority over other considerations such as the size of openings[88]. There may be colonies that maintain a damp hive irrespective of ventilation or equipment used[89]. Other investigators in U.S.S.R. reported better wintering with poor ventilation because it reduced food consumption and bees reared more brood in the spring[90].

In Central Alberta, winds of up to 90 miles per hour kill colonies unless front entrances are provided with a 4" thick and 12" high wind guard of straw and the reduced top entrance (3/32 x 1½") in the inner cover protected with a 3-4" deep telescope cover[91]. In northern Sweden, high winds also produce "hurricanes" in hives that are provided with ventilation that is successful in central Sweden[92]. J. Tinsley (Scotland) had better results with entrances reduced to one bee space ($^5/_{16}$-$1/_{16}$"), and the ½" opening in Dutch skeps is reduced by the bees to approximately a bee space[93].

Providing Ventilation

G. Mendel advocated ventilation by a second entrance large enough to permit air replacement every two days[94] and Giuranu calculated 1.5m of air must circulate to eliminate the CO_2 produced by the metabolic activity of the bees[95]. Of 20 colonies taken out of a cellar on February 15th, the 10 with open upper entrances and insulating quilts had slightly less sealed brood and a slightly greater loss of bees when checked in the spring. This may have been caused by the insulation which reduced the absorption of warmth from the sun rather than the top ventilation[96].

Evidence from 267 colonies in Czechoslovakia indicated that ventilation resulted in less stores being used, fewer bees lost, earlier brood production and 50% higher honey yields[97]. Many years of experience by P. Widstrand in northeastern Minnesota with temperatures as low as -50°F. showed that a ¼ x 2" notch in the front of the inner cover for escape of excess moisture was advantageous[98]. Ekman calculated that the increased water vapor at -10°C. required an increased opening diameter of only 7.9 mm from 7.6 mm[99].

The result of an experiment in Australia comparing colonies with 64.5 cm² of ventilation and those without any ventilation showed no difference in colony development, honey production or net weight; but the ventilated hives had much less condensation during bad weather, were without fungal growth on the top bars, and the paint was not "lifted" (peeled or blistered) on the supers[100]. Adequate ventilation must be provided when hives are painted as paint seals the surface and moisture that enters the porous wood is trapped behind the paint film[101].

An experiment in Ottawa for five winters, where temperatures are below freezing for six months, using both bottom and top entrances rather than either one alone resulted in fewer colonies dying; but the colony strength was reduced by bees flying out during the cold weather in late winter and early spring[102]. There is an assumption made by some that it is the physiologically old bees who are ready to die anyway that fly out and drop in the snow[103] and that a higher percentage are infected with Nosema[104]. The authors have found such bees at distances of 500 feet from their hives. Various suggestions have been made to prevent the direct rays of the sun from shining into the entrance using an alighting board that can be folded[105], a light trap[106] or entrance porticos that can be covered during the winter[107]. Taking such precautions to prevent bees from being lured out by bright light may be prudent since it appears that the combination of sun and snow disorients the bees so they fly down into the snow where they become chilled, and cannot return to the hive[108]. F. Greiner termed this phenomenon "hallucination" and reported that some beekeepers covered the snow around the hives with straw (or ashes and sawdust) to reduce the intense whiteness of the snow that dazzled the bees when they flew out for a cleansing flight. Those that did drop to the ground were not chilled and could rise again[109].

Lower Entrances

A lower entrance does not appear to have any significant advantage, but it must be reduced in autumn to $^3/_8$ x 1½" or ¼ x 2" before mice have an opportunity to damage brood combs by establishing a nest in the bottom of the hive[111]. The entrance reducer supplied with the hive can be placed in the bottom entrance after cold weather sets in or an adjustable entrance reducer can be used, preferably of metal[112]. I.W. Forster used an 8 x 360 mm ($^5/_{16}$" x 14") all-season entrance which prevented the entrance of mice with no significant difference from hives with entrances 20 x 360 mm ($^{14}/_{16}$ x 14") in summer and 10 x 60 mm ($^3/_8$ x $2^{11}/_{32}$") in winter[113]. Closing the lower entrance and leaving the upper one open was an advantage: 1)colonies consumed less honey, 2) fewer bees died, 3) more brood was present in the spring, and 4) a better honey crop resulted[114]. If only a bottom entrance is provided the bees can be seen to ventilate (the temperature is higher **under** the cluster), but this requires that additional honey be used for energy resulting in additional water vapor and carbon dioxide which must be removed[115]. The single bottom entrance must also be large enough to permit adequate fresh air to pass in under the outgoing warm air[116]. L. Kreutzinger devised a perforated adjustable entrance-closer that fitted any size entrance, and could be securely fastened without nails or the use of tools[117].

Three groups of five equalized colonies were given three degrees of ventilation: a)

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strong (upper and lower entrances fully open), b) medium (both entrances half closed), c) little (lower closed, upper half-open). Group "C" consumed less honey, had more brood and produced more honey during the summer (84 kg [184 lb.], compared to 56 [123.2 lb.] and 60 kg [132 lb.])[118]. A similar study found the least ventilated colonies produced the highest concentration of carbon dioxide in the cluster, consumed less honey, had less excrement in their intestines, lost fewer bees and produced more brood in the spring[119]. In Poland providing top and bottom entrances resulted in small differences in honey consumption[120], but in central Sweden, Fries found no significant differences in food consumption, loss of bees, spring population or honey yield (there was a marked reduction in damp and mold[121]. However, T.I. Szabo in Alberta did find that providing top entrances resulted in significantly less food consumption, greater populations, and more capped worker and drone brood. Leaving the bottom entrance (1.5 x 37 cm [$^{19}/_{32}$ x $14^{18}/_{32}$"]) fully open, or providing a bottom and top-side entrance (each 1 x 5 cm [$^{3}/_{8}$ x $1^{31}/_{32}$"]) were less successful[122]. That Fries used side vents for top ventilation may explain why his colonies did not exhibit significant differences.

Providing Top Ventilation

Although statistical analysis may not alway provide significant evidence in favor of top ventilation, it is generally considered mandatory to provide an auxillary entrance where there is the possibility of dead bees, wet snow or ice blocking the lower entrance since bees must be able to make defecation flights whenever the weather permits[123]. The excess heat produced when bees metabolize honey can perhaps be best invested in removing excess moisture from the hive. An upper exit will facilitate the exit of water vapor and diminish the expenditure of energy required if the bees must fan to create a current of air through a bottom entrance[124].

Conner suggested a top opening might be equally valuable in summer to facilitate the removal of the water which bees evaporate from nectar at the rate of 21. (qt.) of water vapor per 1. (qt.) of honey[125]. Investigations have shown additional ventilation speeds ripening of honey by 1-4 days, while inadequate ventilation causes delays up to 21 days [126]. The provision of ventilation is considered an important factor in reducing the incidence of swarming[127]. Measurements of the difference in hive temperatures during the summer, with and without top ventilation, have been made in Australia. The average daily maximum was 1.3°C cooler with top ventilation when temperatures ranged from 21.33-38.6°. The average maximum did not increase beyond 58 cm² of top ventilation. The coolest hives (-0.9°) were lost with the smaller entrances [$^{7}/_{16}$"] and 25 mm (1") and the most top ventilation (116 cm²) [18 m²]. Top ventilation of 39 (6 m²) and 58 cm² (9 m²) resulted in mean differences in the daily maximum temperature of -0.2 and -0.7° (the control was 15.2 cm) [2.4 m²][128]. In Ontario, V. Shaparew found top ventilation resulted in temperatures at the bottom entrance averaging 4°F. less with air circulating **down** from the top to the bottom of the hive[129]. Experiments by W.A. Stephen indicated that air forced downwards through the supers dried uncapped honey more efficiently that air from below[130]. Where there is only a bottom entrance, fanning bees create a current of air going in on one side, and may even have a second group of bees on the other side fanning air in the opposite direction. In Shaparew's view, a top opening is required only during nectar evaporation since he calculates two air exchanges per hour are adequate for ordinary ventilation at other times. J. Jessup sealed a large hive occupied with bees, and fitted two small openings with anemometers to measure the air flow. With the ambient temperature at 27°C, 487-807 ft³ of air entered each hour, compared to 22 ft³/hr resulting from the temperature gradient in the absence of bees fanning[131].

Top entrances range from the simple to the elaborate: 1. A $^{3}/_{8}$ x $^{7}/_{8}$" auger hole bored in the upper front corner of all hive bodies (to one side of the hand hole) which can be closed, when not required as an entrance, with a cork, cooperage bung, wire screening (guaze), a hinged strip of metal or wood, or a shotgun shell base[132]. Some prefer a hole just below the handle in deep bodies, and in the center of shallows[133]. A 1" hole can be mouse-proofed by stapling a bent wire on the inside of the hole. Bend a 5" length of aluminum wire over a ¼" diameter rod or bolt to form the shape of a hairpin; adjust the wire so the spaces are equalized[134]. If the hole is sloped upward, it will shed rain. Even larger openings can be used with devices such as the Thorne plastic adjustable disc hive entrances[135]. If left open during the season, the colony will not use the ends of the comb in the vicinity of the opening[136]. For those who sell bees and meet with objections to auger holes in the hive bodies[137] there are other possible options listed below.

2. A $^{3}/_{8}$ x 1½" slot cut out of the front edging of the inner cover which is turned upside down over the colony to provide a $^{3}/_{8}$ - ½" space over the top bars for the bees to move across combs and to get out, and for moisture to be vented more efficiently than from an auger hole[138]. Bees can cluster in this space and fan out the afforded by the "Moreton quilt"[140] and the Bailey queen excluder (a wood-bound queen excluder with three strips of $^{3}/_{8}$ x $^{7}/_{8}$" wood on the sides and back[141]. The Root type half-round groove can be made with a round rasp or a drill and bit[142].

3. Full width, full length shingles can be used in place of an inner cover on top of the upper hive body with a V-cut in the front edge to serve as an entrance[143].

4. Strips of beveled shingle 1" or more in width can also be placed along the side edges of the top hive body with the thickest end ($^{3}/_{8}$" at the front[144]; a strip of tin and a $^{3}/_{16}$" alighting-board at the thick end connects the shingles at the midpoint and keeps them in place when a box is placed on top[145].

5. A slot in the front rim of the cover with a ¾" strip of wood on the other three sides which rest on the inner cover (bee-escape board). The bee-escape hole(s) is (are) left open to serve as passageways[146]. It was also common to use a double inner cover cleated together on three sides with the front open. Two slots ½" wide, one 3" from the front and the other in the middle of the board provided entrance into the hive. The lower board could be a little longer to provide a landing platform[147].

6. Strips of wood, the thickness of the edging, placed along the sides and behind the bee escape (feeding hole) of the inner cover to form a channel or tunnel to the front of the hive[148]; also assembled in advance[149].

7. Thin strips of wood, match sticks or nails placed under the front edge of the inner cover to lift it. An alternative for such shims is provided by four upholstery tacks driven into the rim. In winter, the inner cover is placed upside down so the $^{1}/_{8}$" heads provide a space between the hive body and the cover. In summer, the board is placed right side up again to create a space between the inner cover and the telescopic top cover which the bees will not cement together with propolis[150].

8. A strip of 2½ x $^{3}/_{8}$" wood laid along one edge of the outer telescope cover to raise it. Equally effective alternatives would be a match stick, nail or twig to keep a film of air between the cover and inner cover[151].

9. An inverted bottom board laid over an inner cover with the entrance reducer in place[152].

10. The upper hive body pushed back $^{3}/_{8}$" with a slat nailed above the front opening to protect it from rain[153]. A. Belangeon suggests the chaff tray be pushed forward to provide a crack at the back[154]. The same thing could be done with the inner cover. But G.R. Hartley (California) nails ¾" cleats on three sides of a flat hive cover to make an opening at the rear of the hive which does not require additional shielding from rain[155].

11. In England, some beekeepers place an empty super on top of the open hive; "on lifting the ventilated roof one sees the frame-tops and cluster!"[156]. Mraz reported the successful wintering of a colony in a hive with a feeder can left on the frames by error, although the deep cover kept out the weather[157]. For two years in succession, one colony belonging to the authors

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survived the removal of its cover and top box filled with hay, from the end of the deer hunting season (December) until April. The third year the vandals tipped the hive over on its side. It survived this insult too, although, the other seven hives in the group did not. A fourth assault finally did the plucky colony in.

12. **Patented Devices:**

a. Ventilated lower entrance for beehives: "Storm-proof" entrance for beehives J.D. Schelegel U.S. Pat. 2,025,098 (Dec. 31, 1935).

"M.M." [ventilated] entrance Moreton & Co. (England) Pat. Pend. (1951)½

b. **Provisions for ventilation**

Beehive cover W. Diehnelt U.S. Pat. 2,498,880 (Feb. 28, 1950).
Beehive cover L.F. Wahl U.S. Pat. 2,709,820 (June 7, 1955).
Beehive with ventilating ends J.W. Green U.S. Pat. 2,593,296 (April 15, 1952).
Ventilated, insulated cover for beehives H. Babcock, Jr. U.S. Pat. 2,530,801 (Nov. 21, 1950).
Ventilating hive cover G.F. Watkins U.S. Pat. 2,548,275 (April 10, 1951).
Beehive C.W. Evans U.S. Pat. 2,292,110 (Aug. 4, 1942)
Beehive F.E. Hageman U.S. Pat. 2,522,511 (Sept. 19, 1950).
"Moreton Quilt" (Inner Cover) Moreton & Co. (England) Pat. Pend. (1951).
Heim bee ventilator Advertisement in *American Bee Journal* (1926) 66(5): 243-239.

c. **Ventilation and top entrance for bees:**

Hive cover with built-in top entrance W.L. Stulee U.S. Pat. 2,578,103 (Dec. 11, 1951)
Top entrance beehive E.W. Brown U.S. Pat. 1,816,631 (July 28, 1931)
Temperature responsive ventilator for beehives M.I. Taylor U.S. Pat. 2,574,768 (Nov. 13, 1951).
Beehive [thermostat] J. Sauter U.S. Pat. 2,232,343 (Feb. 18, 1941).
Combination board for beehives C.W. Evans U.S. Patent 2,575,102 (Nov. 13, 1951).
Beehive with provision for a top entrance O.A. King U.S. Patent 2,128,000 (Aug. 23, 1938.

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Wintering Colonies

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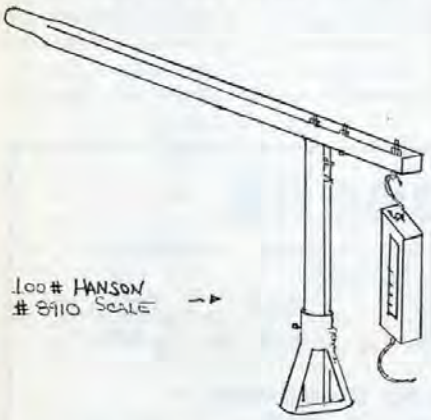
After colonies to be wintered are selected then it must be determined just how much honey is necessary for the survival of the colony without any concern on the part of looking at enough combs of honey in each colony to determine an adequate supply. Last year we devised a scale (shown) which will give us an accurate weight and takes only a few minutes of time. Our test, of only one year, shows that colonies along this latitude of 41d should weigh 115 pounds, give or take of couple of pounds. This includes the bottom boards, two brood chambers, and inner cover. Weighing these colonies can be done most accurately by weighing each side. Front and back is close, but if hives slope forward, as they should, it will be off slightly. Adjustment of combs from colony to colony can be done easily with involving much time. **Weighing is the only sure way.** There is seemingly a consensus of opinion among beekeepers that bees cluster on combs of honey during the very coldest weather. Actually, most of the cluster is formed on empty combs adjacent to the honey so honey can be fed into the cluster. This is an indication that they prefer to cluster on empty combs so why not make empty comb available where they would prefer to cluster if they had a choice. So, in recent years we have made a practice of moving two full combs of honey from the center of the upper brood chamber to either side of the lower brood chamber and moved two nearly empty combs from the lower brood chamber to the center of the upper brood chamber just prior to wrapping the colonies for winter. The honey in the several combs in the lower chamber will be carried up by the bees and used as needed.



Some honey from the full combs may be moved, by the bees, to the empty ones but for the most part they will be left empty which will provide space in the warmest portion of the hive for the first brood about mid January.

GOOD COMBS are necessary for good wintering of colonies. When we refer to good combs we think of combs with no major defects and combs that contain not more than a fraction of 1% drone cells. If all 20 combs in the brood chambers contained a patch of drone cells as large as a silver dollar that would produce a tremendous amount of drones. Bees winter best on combs constructed from a base of plain brood foundation or crimped wire foundation. In our own operation we prefer plain foundation with four wires in the frames and foundation electrically imbedded. We also use an extra heavy foundation which is made six sheets to the pound as opposed to the usual seven sheets to the pound. We find it easier to work and it is accepted more readily by the bees.

The wrapping is composed of material, called polyfoam, which is used also by nurserymen to protect small shrubs during the winter. Around this we wrap the black 15 pound felt, building paper. The inner cover, with the escape hole covered, is nailed firmly to the upper brood chamber. This assures a snug fit and that it will remain in place. The ¾" styrofoam is fitted directly in the rim of the inner cover. The tar paper to be fitted around the two colonies can be cut 18 inches wide and long enough so it overlaps at one corner. After all else is in place then a full width piece of tar paper is fitted over the top and folded as one would wrap a package and all is latched to the four sides of the double wrap. A hole is then cut in the foam and paper at the middle entrance to allow access for the bees to the outside. The lower entrance should have been reduced to the small opening as the honey flow ended and cooler weather begins. Just a few cool nights with a wide open entrance will allow mice to enter and ruin a couple of good sets of combs. Close them early for good insurance.

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Wintering Colonies

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inches long. This provides the colony with an entrance that is never clogged by dead bees and only by snow if the hives are completely covered.

Many beekeepers prefer drilling holes in the brood chambers to provide a positive exit during the winter. Generally these holes are of the size that bees pull away from the combs in the near area and frost will accumulate during the cold weather. the **Middle Entrance** (shown) provides the exit without the draft or the accumulation of frost.

MIDDLE ENTRANCE

The above diagram is of a middle entrance which was originated by the late Dr. O.W. Park, Iowa State college and has been tried and tested by the Stanley Brothers, Gilbert, Iowa.

Cedar shingle strips one inch wide are placed along each side of the lower brood chamber with the thick end back ¾ inch on one side. The pice of ¾ inch lumber sawed the thickness of the thick end of the shingle measures ⅜ x ¾" x 13½" inches long. This provides an entrance ⅜ x 1¼ inches which is ideal for winter.

Closing the bottom entrance entirely eliminates the possibility of mice gnawing their way into the hive during the winter. A piece of board 1" x 2" x 14¾" can be nailed at the entrance to completely close it.

This entrance will give the bees much winter protection along with other packing methods.

Colonies should be managed during the entire beekeeping season so very little additional maneuvering of combs is necessary in colonies to provide sufficient stores for wintering in good condition during any normal winter.

A considerable amount of winter loss can be contributed to the fact that many colonies are allowed to be wintered that do not qualify in any way. All colonies should be examined in late summer or early fall, first for any disease, then for good brood patterns. A sufficient amount of brood will assure a good cluster of bees for winter. The 20 combs in the double brood chamber should contain some pollen along with the brood and a sufficient amount of honey.

Many beekeepers of the past have been of the opinion that colonies kept south of 41 degrees latitude do not necessarily need winter traps. As far as bees are concerned, when we think of temperatures necessary for survival, there is winter all the way from Texas into Canada. I have been through Kansas in as bad a blizzard as we get in Iowa and some of the ice conditions in Oklahoma are something else. All these States have winter as does Iowa, but over a shorter period of time. So, all colonies need and deserve protection.

Now we believe if you put all these things together as a general practice for wintering bees you will be successful. Ignoring any part of the program simply increases the amount of probably loss. To

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Wintering Colonies

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say the least you will have saved some honey stores and all colonies will be in more ideal condition come spring.

In years past we would place a shim under the inner cover to allow the moist air to escape from over the cluster. Now, Dr. Eric Erickson, research leader at the Madison, Wisconsin Research Laboratory, has found that bees do need a certain amount of humidity during the winter. The desired amount is yet to be determined. It is evident that while we were allowing the moist air to escape, the bees were finding it necessary to manufacture more to fulfill their needs. The cold air would meet with the warm moist air and the result was considerable frost on the frames and combs above the cluster.

When two colonies are placed on the H-frames, side by side, a dead air space is formed underneath since the cross members of the H-frame come even with the side rails of the bottom boards. They remain dry underneath winter and summer.

Now let us put this all together and provide what has become quite a succesful means of wintering colonies of bees.

Working from bottom to top, we have the H-frame, bottom board, entrance reducer, two brood chambers with middle entrance, inner cover, styrofoam and the wrapping paper with polyfoam beneath.

We have observed colonies during subzero weather and above. At ten degrees below zero when we lifted the inner cover bees flew out at us. You need no ask at what temperature they cluster under the styrofoam because we have no idea. We only know they are clustered at sub-zero temperatures and they are apparently active enough to control the humidity in the hive since we see no sign of such a problem, which was a big problem before.

Colonies wintered in this fashion during this past very unusual winter showed no signs of dyscentary and no moldy combs. This fact alone is worth many times the amount of effort that was put into preparing the bees for winter. Try it!

A few years ago when the State of Minnesota did a survey on Nosema disease some samples were sent from our own colonies which showed signs of the disease. Since that time we have begun regular recycling of old, extremely dark or black combs so no brood combs are over six years old, some less. While never having fed an ounce of Fumidil B, which is recommended for the control of Nosema, colonies that were sampled and tested this Spring showed no signs of Nosema disease.

Question — is this a control for Nosema disease? Have we eliminated the stress on our colonies through good wintering? Or "can we assume that on rare occasions the Nosema disease just goes away?□

A Congressional Act To Help Promote Honey

Where can I sell my honey? How can I get the best for the efforts I put into beekeeping? How can I let others know about what I have to offer? Every beekeeper has asked these questions. The answers might be found in a honey promotion plan currently being developed by the American Beekeeping Federation.

The maintenance and expansion of existing honey markets are vital to the welfare of honey producers, those concerned with marketing, using and processing honey and those engaged in general agriculture requiring bees for pollinating services. The honey production industry, within the United States, is comprised mainly of small and medium-sized businesses which are primarily agriculturally oriented rather than promotion oriented. Consequently, the development and implementation of coordinated programs of research and promotion for the maintenace of markets and development of new markets, have been inadequate. That is a fact compounded by large quantities of low cost imported honey that have been brought into this country, in recent years, replacing domestic honey in the normal trade channels. Without cooperative action in providing for and financing a nationally coordinated promotion, research, market development and consumer information program designed to expand the market for honey, individual honey producers, handlers wholesalers and retailers are unable to effectively respond to current market demands and needs.

To that specific end, the American Beekeeping Federation has drafted a proposed Honey Promotion Research and Consumer Act that will, by next session, be introduced to the Department of Agriculture and to the House and Senate Agriculture Committees for legislative consideration. If enacted by Congress, the Act will provide for the development and financing, through an assessment of produced honey entering the market, of a program designed to strengthen the honey industry's position in the marketplace and to maintain, develop and expand markets for honey and honey products. The Act will, in no way, dictate quality standards, provide production control or otherwise limit the individual honey producer's right to produce honey. Nor will it pose any trader barriers to honey produced in foreign countries.

The basic organizational structure for the Honey Promotion Research and Consumer Act, as proposed, is as follows:

The Secretary of Agriculture will appoint a Supervisory Board consisting of not more than 50 voting members. Nominations for the Supervisory Board shall be one person submitted by the State Association from each state. If a state does not nominate and is not one of the top 20 honey-producing states in the U.S., it will not be required to have representation on the Board. The Supervisory Board, in turn, will elect an Executive Honey Board consisting of seven honey producers, three handlers, one producer/handler, one importer, one member of a honey marketing cooperative and one public member. The seven producer members will represent seven regional divisions created on the basis of total honey production and total market area or population. Terms for appointments to both boards shall be three years with no member serving more than two consecutive three year terms. Supervisory board members will serve without pay except that for called meetings reasonable expenses may be paid. Executive Honey Board members will serve without pay except for reasonable expenses incurred in performing administrative duties.

The powers and duties of the Executive Honey Board will be to administer the rules and regulations of the Act, to recommend amendments to the order and to act upon complaints related to implementation of the Act. The Supervisory Board, by a vote of ⅔ of the members present, may overrule the Executive Honey Board on decisions related to rules and regulations of the order.

At the heart of this Act will be an assessment on honey marketed in the U.S. For the first year that the plan is in effect, the assessment rate will be .5¢ (½¢) per pound from the producer or importer and .5¢ from the first handler. Thus, the honey that flows through normal channels will be assessed a total of 1¢ per pound, with ½¢ being paid by the producer or importer and .5¢ (½¢) being paid by the handler. Honey turned into the Commodity Credit Corporation (CCC) under the Honey Loan Price Support Program shall also be assessed a .5¢ (½¢) per pound. The Executive Honey Board may submit to the Supervisory Board, and the Supervisory Board may then submit to the Secretary of Agriculture, a request for an increase in the assessment rate not to exceed .5¢ (½¢) per year and in no case more than 4¢ per pound.

Funds from assessments, to be collected by the first handler of honey, will be used for market research and development, advertising or promotion of honey or honey products, consumer information and such other expenses for the administrative, maintenance and functioning of the Board as may be authorized by the Secretary of Agriculture. All such plans or projects must meet with the Secretary's approval. Unpaid assessments may, through the Secretary, be pursued with a collection suit. Prior to the issuance of any order, the Secretary must determine, by referendum, that it is favored by not less than ⅔rd of the producers voting in such a referendum or by the producers of not less than ⅔rd of the honey produced in a representative area.

Five years from the time that collection of assessments is authorized or when petitioned by 20% or more of the honey producers and/or at the request of the Supervisory Board, the Secretary of Agriculture will hold a referendum to determine if the Honey Promotion Research and Consumer Information Act should be continued, suspended or terminated.

Philosophically, this proposed legislation is supported by similar marketing orders sponsored by other agriculturally related industries. Complete details of this plan, as it now exists, are available from Binford Weaver, FEDERATION HONEY PROMOTION COMMITTEE, Chairman: Rt. 1, Box 256, Navasota, TX 77868. Because of the objective to introduce the plan into the U.S. Congress by next session, the necessity of immediate and active support is vital to the effort. Names and addresses of legislators represented on the House Senate Agricultural Committees are also available from Mr. Weaver. □

The Unique Legs Of The Honey Bee

By DR. MARK E. HEADINGS
The Ohio State University
Agricultural Technical Institute
Wooster, Ohio

Some of the most remarkable legs found in the insect world are those present on the honey bee. Insects use their legs to perform various tasks of which locomotion is the primary one. Legs are modified for running, jumping, digging, nest building, swimming, grasping, clinging, grooming, fighting, hearing, touching, smelling, and tasting. Several unique functions of the legs of honey bees are for cleaning the antennae and other body parts, for carrying pollen back to the hive, and for removing wax scales from the wax glands on the lower side of the abdomen. These functions thereby enable the honey bee to perform work vital to the survival and well being of the colony. The jointed legs of the honey bee consist of six principal parts or segments. The segment attached to the body is called the *coxa* followed by the *trochanter*, the *femur*, the *tibia*, the *tarsus* (foot) and the *pretarsus*.

FRONT LEGS — The unique structure on each of the front legs of the honey bee is the *antenna cleaner* (Figure a.). This device consists of a semi-circular notch on the upper end of the tarsus. The notch is densley lined with a row of small, stiff hairs resembling that of a comb. Directly above the notch and attached to the lower end of the tibia is a clasp which serves to close the open side of the notch when the tarsus (containing the notch) is flexed up against it. An antenna drawn through the antenna cleaner is therby encircled by the notch on one side and the clasp on the other.

In this way, the honey bee can remove pollen and other foreign matter which may be adhering to the antennae. It is important that the antennae be cleaned periodically since some of the important sensory organs are located on them. The front legs are covered with hairs, and the upper part of the tarsus in particular is used to brush pollen and other foreign matter off of the head (Snodgrass, 1978).

MIDDLE LEGS — When the honey bee walks (as is true with other insects), the middle leg of one side is raised and moved forward in unison with the front and hind legs of the opposite side. As a result, the insect is well supported at any moment by three legs while the other three are raised and advancing (Metcalf, Flint, and Metcalf, 1967).

In addition to locomotion, the middle legs are used to clean pollen from the thoracic region of the body and to move pollen from the front legs to the hind legs where it is then placed into the pollen baskets. A structure known as the tibial spine is attached to the lower end of the tibia (Figure 1b.). It is thought this spine may be used for cleaning parts of the insect, for unloading pollen pellets from the pollen baskets (Dadant, 1976), and possibly even for removing wax scales (used in building comb cells) from the eight wax glands located on the underside of the abdomen.

HIND LEGS — The honey bee has a pair of hind legs which are equipped to collect and carry pollen. The amazing phenomena is how the bee is able to place and hold a ball of pollen on the outside of each of the hind legs. The structures present on the hind legs to accomplish this are the pollen comb, the pollen rake (pecten), the pollen press (auricle) and the pollen basket (corbicula). The first or upper segment of the tarsus is greatly enlarged to accomodate a pollen comb on its inner surface. This comb is comprised of many spines and serves as a brush to collect pollen in preparation for transferring it into the pollen basket. The pollen rake is a row of spines located on the lower edge of the tibia. When the two hind legs are rubbed together, some of the pollen is scraped from the pollen comb onto the pollen rake. Directly below the pollen rake (upper end of the tarsus) is the pollen press. Some of the pollen on the rake then falls on the flattened press area. When the tarsus is flexed upward, the pollen on the press is pushed up into the pollen basket which is located on the outside of the tibia (Figure 1.c) The pollen basket is comprised of long, inward-pointing spines which hold the pollen ball from falling out. Some regurgitated honey from the worker bee is thought to be mixed with the pollen grains to make them stick together in a ball. The worker bee unloads her own pollen loads into the comb cells by rubbing them off with her middle legs. Another bee then works at breaking the pollen ball apart with her mandibles and finally presses the pollen grains into the cell (Snodgrass, 1978) Propolis is also returned to the hive in the pollen baskets. This material is collected from trees and is used to fill in crevices and holes in the hive in a sanitary condition. In the case of propolis loads, one or more other bees are thought to unload the incoming bee and place it in the crevices and holes.

In summary, the legs of the honey bee serve as tools of vital importance when considering the various functions they fulfill. The ability of the bee to collect, transport, and deposit pollen into the comb cells is critical for bee development since pollen is a high protein food source. The amazing thing is how a honey bee is programmed to perform a variety of rather complex activities, each at the appropriate time, without first going through a training period.

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Figure 1. (a) Antenna cleaner on the front leg; (b) tibial spine on the middle leg and (c) pollen basket on the hind leg of the worker honey bee.

NEWS AND EVENTS

Alberta

Alberta Beekeepers' 50th Convention & New Office Address

The Alberta Beekeepers' Association will hold its 50th annual convention this year on November 2, 3, & 4 at the Mayfield Inn in Edmonton. The key speaker will be Dr. Harry Laidlaw, "Dean of Queen Rearing," who was also a speaker at the ABA's 25th Convention.

To celebrate the Association's Golden Anniversary, this convention will also be a Homecoming for past and present members,and our Californian colleagues are contributing to an evening of talented nostalgia and fun on November 3.

For further information, please contact Louise Zwaenepoel at the new office address: #7, 7227 - 147 Avenue, Edmonton Alberta T5A 1C9; the phone number is the same: (403) 475-3314. For room reservations, call the Mayfield Inn, 16615 - 109 Avenue, Edmonton Alberta T5P 4K8, phone (403) 484-0821.

California

TO: MEMBERS AND FRIENDS OF THE CALIFORNIA BEEKEEPING INDUSTRY:

The 94th Annual Convention of the California State Beekeepers Association will be held November 14-17th, 1983 aboard the R.M.S. Queen Mary at Long Beach, California.

Gene Brandi
1511 Hawthorne Drive
Los Banos, California 93635
(209) 826-2881

California

A luncheon honoring Vi Walker, President of the Ladies' Auxilliary of the American Beekeeping Federation and Advisor to the California Honey Princess; and Marilyn Kiser, Manager of the California Honey Advisory Board, was held on board the Queen Mary in Long Beach on July 22nd.

The luncheon was given in "thanks" for the many hours of time and effort both Marilyn and Vi have spent with the Honey Queen Program in Los Angeles and Orange Counties. Sponsoring the Appreciation Luncheon were California Honey Princess, Roxanne Mitchell, Orange County Honey Queen, Kim Kercher, Los Angeles County Honey Queen and Honey Princess, Heather Wade and Carolyn Comport. Others in attendance were members of the Orange County and Los Angeles County Honey Queen and Fair Booth Committees.

Marilyn who is moving to Sonoma, Vi and Marilyn were presented with orchid leis and everyone else had party leis. The new address is Marilyn Kiser, c/o California Honey Advisory Board, Box 265, Sonoma, California 95476.

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Dr. Larry Connor conducts field demonstrations during the EAS short course in Maine, this past August. Dr. Connor's expert beekeeping coordination of a three day short course was one of this year's conference highlights.

Alfonse Avitable, EAS short course instructor and co-author of *The Beekeeper's Handbood* **addresses students.**

More EAS photos to follow, next month

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Georgia

GEORGIA BEEKEEPERS ASSOCIATION

The annual meeting of the Georgia Beekeepers Association will be October 14th and 15th at the Heritage House Motel in Albany, Georgia. The meeting will begin with dinner on Friday evening and continue through the day on Saturday. For more information, contact Cecil Sheppard, GBA Secretary, 3204 Westmart Lane, Doraville, GA 30340.

Notice Of Upcoming Meeting

The Indiana State Beekeepers Association will hold it's annual fall meeting on October 22 in the Sheraton Inn at Marion, Indiana.

The meeting will feature the ISBA honey show and speakers including Dorothy Stoller of Stoller Honey Co., Latty, Ohio.

Registration will begin at 8:30 AM. and the meeting will convene at 9:30 AM.

For further details contact Claude Wade, 614 State Office Building, Indpls., IN 46204, 1-327-232-4120.

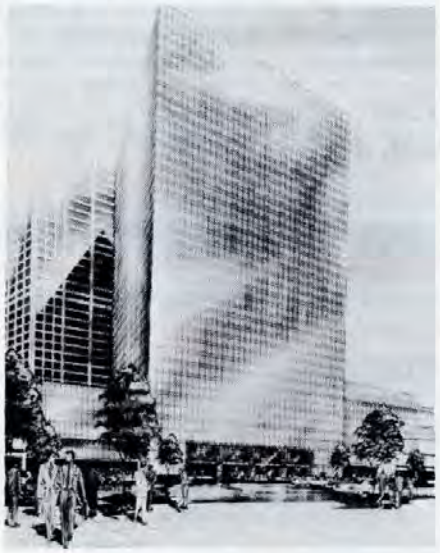
Oregon

OREGON STATE BEEKEEPER'S ASSOCIATION

The O.S.B.A. will hold their Fall Convention in Eugene, OR., on November 5th, 1983 at the Lane County Convention Center and Fairgrounds, 796 W. 13th St., Eugene in Conference Room #1. Registration starts at 8:30 am. and the Registration Fee is $7.00 per person or $10.00 per couple. The morning guest speakers will be Dr. G. Mink from Prosser, Washington, and Dr. M. Burgett from Oregon State University. There has been much confusion amongst the Cherry Growers and the Beekeepers as to whether or not bees transport Cherry Virus. Do they transport it from California to Oregon and do they transport it from one orchard to another orchard at a higher elevation? O.S.B.A. has been very concerned about the myths and facts. We have asked Dr. G. Mink from Prosser, Washington who has done and is doing considerable research on this problem to speak. Dr. M. Burgett from O.S.U. will speak on proper colony strength for pollination of orchard crops. Dr. Burgett will give a report of the research he did for the Wasco County Cherry Growers Association. The afternoon speakers will be Ron Babcock from Bothel, Washington and Gary Seeley of Brooks, Oregon. They will be speaking on the different methods of processing and collecting and cleaning pollen and the care with which pollen must be handled.

Minnesota

MINNESOTA HOST COMMITTEE TOURS NEW HOTEL



Host committee members were guided on a tour of the new Minneapolis, Minnesota AMFAC Hotel. Site of the 1984 American Beekeeping Federation Convention. Major outside construction has been completed, with the interior work well along. Hotel officials have indicated that The facility will be totally completed by mid October, 1983, about three weeks ahead of schedule.

Convention goers will enjoy spacious rooms and excellent convention/meeting accomodations. Downtown Minneapolis, with its variety of stores, restaurants and entertainment is easily accessible through the indoor skyway system. Beekeepers can visit Minneapolis in 70 degree comfort, even on the worst winter days. Plan to attend the American Beekeeping Federation Convention, January 16-20. 1984 in Minneapolis, Minnesota.

Southern States Beekeepers Federation Convention Schedule

Hey, all you beekeepers out there! How would you like to take a vacation in one of the country's finest resort areas? Attend a meeting where the problems of our industry are addressed by its leaders? Leave the meeting with a course of action you can participate in to actually change some of these problems for our industry?

Then the SSBF meeting October 30, 31, November 1 & 2 in Myrtle Beach, South Carolina is the place for you!

Pre-registration costs are $45.00 per family or $30.00 per individual and room rates are $37.00 per day.

For more information, write The Southern States Beekeepers' Federation, 1403 Varsity Drive, Raleight, NC 27650, or call 919-737-3140 or 919-921-3640.

Conference Highlights

Monday, October 31, 1983

9:30 a.m. - 10:30 a.m. — Dr. Roger Morse, Professor and Extension Apiculturist Cornell University, and Dr. Basil Furgala, Professor Minnesota University and Federal Extension Apiculturist — Debating the magnitude of the problems to American Beekeeping that will come with the arrival of the African Bee.

11:00 a.m. - 11:30 a.m. — Dr. H. Shimanuki, USDA Beltsville Lab Leader — "Impact of Parasitic Bee Mites on Beekeeping in the U.S."

11:30 a.m. - 12:00 noon — Dr. Dave Fletcher, Department of Entomology University of Georgia "the African Bees in their Homeland"

12:00 noon - 12:30 p.m. - James Green, North Carolina State Apiarist, NCDA, President of the Apiary Inspectors of America, "the African Bee from a Regulator's Viewpoint"

2:00 p.m. - 5:00 p.m. — Short Course, Part I. Follows the popular North Carolina Master Beekeepers format.

Dr. John Ambrose, Associate Professor and Extension Apiculturist, NC (High quality shopping with wholesale prices).

2:00 p.m. — State Association leader round table.

Tuesday, November 1, 1983

9:15 a.m. - 9:45 a.m. — Royden Brown, President C.C. Pollen Company.

9:45 a.m. - 10:15 a.m. — Dr. Elton Herbert, Jr., USDA Beltsville Lab Research Scientist "Current Research in the Vitamin Requirements of Honey Bees"

10:15 a.m. - 10:45 a.m. — Joe Parkhill, Honeyologist, "Honey and Pollen — God's Gifts to Mankind"

11:15 a.m. - 11:45 a.m. — Charles Mraz — "Bee Venom Therapy"

11:45 a.m. - 12:15 p.m. — Dr. Rick Fell, Department of Entomology — VPI and S.U. "Venom and Allergic Reactions from a Scientific Viewpoint"

12:15 p.m. - 12:45 p.m. — Dr. Arnold Krochmal — Professor of Biology —

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News & Events

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Atlanta University, UNC — Ashville, and Professor of Forestry — NC State University — "Propolis"

9:00 a.m. - 5:00 p.m. **Low Country Tour**

8:00 p.m. - 11:00 p.m. Speakers' Reception and Dance — Featuring "Southern Nights" a 10-piece Dixieland Band that plays 30's and 40's dance music.

Wednesday, November 2, 1983

10:15 a.m. - 10:45 a.m. — John Root, Chairman of the Board, A.I. Root, Inc., "The Role of the A.I. Root Company in Promoting Our Industry"

11:15 a.m. - 11:45 a.m. — Charles Dadant, Chairman of the Board, Dadant & Sons, Inc. "The Role of Dadant & Sons Promoting Our Industry".

11:45 a.m. - 12:15 p.m. — Jo Ann Weber — Chairperson American Honey Queen Committee, and Melissa Hart — The American Honey Queen, "Bee a Promoter"

12:15 p.m. - 12:45 p.m. — B.J. Sherriff, Falmouth, England — "The Promotion of Beekeeping in the British Isles"

12:45 p.m. - 1:15 p.m. — Steve Forrest, President SSBF — "Save the Bees — A Workable Approach to Promoting Our Industry"

6:30 p.m. - 9:00 p.m. — Awards Banquet — An outdoor Pig Pickin' and Barbecue with entertainment by Dick Terrier — Musician and Folk Comedian.

Texas Beekeepers Association Convention

The Texas Beekeepers Association will hold its 1983 annual convention in Austin from Thursday, November 3 through Saturday, November 5. The convention site is the Sheraton Crest Inn, located on the shores of Town Lake near the Austin business district. Diverse program topics addressed by guest speakers and knowledgeable Texas beekeepers will assure a busy schedule for the entire beekeeping community from the novices to commercial or professional apiarists. Concurrent sheduling of many programs will permit those attending to select programs to suit their interests throughout the convention.

In addition to convention programs Dr. Larry Connor of the Beekeepers Education Service will conduct his highly acclaimed beekeeping short courses. Beekeepers with some experience who want to improve their beekeeping skills will profit from Dr. Connor's Intermediate Beekeeping Workshop scheduled for all day on Thursday, November 3. A Beekeeping Basics Course from 8:30 AM to 5:30 PM on Friday will be an excellent opportunity for beginning and potential beekeepers.

Pre-registration for the convention and courses is encouraged. Registration fees for the beekeeping short courses will be separate from convention registration charges. For your complete information packed and pre-registration materials for both the convention and short courses, write to Texas Beekeepers Association, Route 1, Box 95-B, Edcouch, Texas 78538 or call (512) 262-1722.

Subjects, Speakers, And Activities At The Texas Beekeepers Association Convention Will Be:

Intermediate Beekeeping Short Course — Dr. Larry Connor

Beekeeping Basics Course — Dr. Larry Connor

Dr. Alan Bolten (University of Florida at Gainesville, Department of Zoology) — "Africanized honey bees in South America — separating myths from realities."

Dr. William T. Wilson (Research Entomologist, USDA, Laramie, Wyoming) — "Pesticides and honey bee losses—current research." and "The Acarine Mite in Mexico."

Steve Taber (Taber Apiaries, Vacaville, California) — Queen Rearing—selected topics.

Joe M. Parkhill (author of several honey cookbooks) — Cooking with honey and pollen.

Dr. Larry Connor — Annual Management Plan

Dr. Alan Bolten — "Effects of sub-lethal doses of pesticides on honey bee colonies."

Steve Taber — Bee breeding for selected genetic traits.

Joe M. Parkhill — diverse uses of honey bee products.

Special Events:

Field trip to a commercial honey house

Tours of Austin

Wisconsin

WHPA CONVENTION

A mixture of practical beekeeping, promotion and consumer interests makes up the agenda for the Wisconsin Honey Producers Association annual fall convention. The confab is set for November 10-12 at the Civic Center in Eau Claire, Wisconsin.

Headlining the program will be Troy Fore, Reg Wilbanks, Bill Carlile and Nettie Renko.

Troy Fore, Jesup, Georgia, will speak on "Priorities for Progress", focusing on issues facing the beekeeping industry. Fore is editor of *The Speedy Bee*, president of the Georgia Beekeepers Association and a member of the American Beekeeping Federation executive committee.

Another Georgia resident, Reg Wilbanks of Claxton, is a fourth generation beekeeper and vice president of Wilbanks Apiaries. He's a past president of the Georgia Beekeepers Association and currently president of the American Bee Breeders Association. He'll speak on the responsibility between bee breeders and honey producers.

Convention-goers will get another perspective on queen raising from Bill Carlile, Glenwood, Iowa. He'll explain queen rearing for small beekeeping operations in the northern United States. Carlile has nearly 40 years experience in bee breeding and is the former editor of the *American Bee Journal*.

Insurance programs for beekeepers will be explained by Nettie Renko, Kansas City, Missouri. Renko will detail coverage options offered by Insurance Professionals.

Joining the out-of-state speakers on the convention platform will be Wisconsin beekeepers, researchers and business people. Walter Diehnelt, Ashippun, will talk on the Japanese Beekeeping Industry; Harold Robertson, Hayward, will discuss Bees for Hire; and USDA Bee Lab leader Dr. Eric Erickson, Madison, will offer programs on Bees and Pollination and Bee Nutrition.

Saturday afternoon workshops include Migratory Beekeeping by Gary Lamb and Jim Williams; Wintering Bees Inside by Charles Eggen and Dennis Hanson; Troubleshooting in Beekeeping by Bill Carlile; How to Set Up a Honey House by Dadant and Sons; Selecting and Weeding Out Queens by Reg Wilbanks; Planning Honey Promotions by Evy Peterson-Nerbonne; and Traveling Through Hungary by August Laechelt.

The Wisconsin Honey Queen Contest, a honey show and the first ever Honey Harvest Trade and Craft Show will complete the weekend's agenda.

Additional convention information is available from coordinator Audrey Willimas, Route 4, Box 128, Mondovi, Wisconsin.

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News & Events

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Maryland

The North American Apiotherapy Society will hold its annual Symposium on Saturday, November 12, 1983, 8:30 to 4:00 at the International Hotel, Baltimore/Washington International Airport, Linthicum, Maryland. Preregistration is essential, deadline October 25. The meeting is open to all interested in the therapeutic uses of honey bee venom and other hive products. For further information contact Ann Harman, President, 15621 Aitcheson Lane, Laurel, MD 20707, 301-253-5313.

1983 Marks the 75th Anniversary of the Maryland State Beekeepers Association. A special celebration is planned for Friday and Saturday, November 4th and 5th at world-famous Lexington Market in Baltimore, Maryland. The celebration will take the form of a Honey Festival on both days, with the annual Honey and Honey Cookery show of the MSBA (including the fall meeting) on Saturday, the 5th. All honey show entries will receive a special commemerative ribbon showing their participation in the celebration. For further details, inquire of: Van Aller, VP; 7623 Old Washington Rd., Woodbine, Maryland 21797.

Illinois State Beekeepers' Association 93rd Annual Meeting November 12, 1983

Speakers Incude:

A New Look at Apple Pollination. Prof. Roger Hoopingarner, Department of Entomology, Michigan State University.

Governor's Annual Report. Mr. Eugene Killion, Supervisor of Apiary Protection, Illinois Department of Agriculture.

Bureau Reports. Mr. William Anderson, Bureau Chief, Plant and Apiary Protection, Illinois Department of Agriculture.

Beekeepers' Health and Demonstrations. Alene Holloway, R.N., R.R. #1, Sparta, Illinois.

Directors' reports on local association chapters in their areas.

Panel discussion, "1984 ISPA Program and Budget." Open discussion of newly elected officers with the membership.

Guest speaker: Mr. Larry Weatherhold, nationally known painter, sculptor, and naturalist.

Reservations for the banquet must be made no later than November 5, with Mr. Udell Meyer, R.R. #43, Box 308, Edwardsville, IL 62025. Tickets are $10.50 each; make checks payable to "Illinois State Beekeepers' Association."

Sheraton Inn has reserved a block of 20 double rooms for conventioners the night of November 11. Price for two persons is $47.00 plus tax; children under 16, free. A 10-day cancellation notice is required. Let the receptionist know that you are with the ISBA convention.

Honey Bake Contest

Contest is open to gentlemen of all ages. Entries will consist of three items: a cake, six cookies, or bread. You may enter one, two or all three categories, but the recipe must accompany each, and the entry must be made with honey. All winning teams of baked goods will be auctioned off.

This auction was tried two years ago, and it met with a great deal of success. The fun with this activity has inspired its return. Place items of baked goods on paper plates, or foil-covered stiff cardboards if they are heavy. Cash prizes will be awarded to the winners.

Ladies; Auxilliary

The Ladies' Auxiliary will meet after lunch break, at about 1:30 PM. A tour of area shopping centers will highlight the meeting. Getting acquainted, visiting, exchanging ideas and honey recipes, and making plans for the coming year we are alos included in the agenda. The event is open to all ladies, whether or not they are members.

Nebraska

Nebraska Beekeepers Annual Meeting

Steve Taber, an internationally recognized bee researcher and queen breeder, Sid Panlowski, Canadian honey producer from the far north, and Bill Carlile, regular contributor to the American Bee Journal, will be the featured speakers at the annual meeting of the Nebraska Honey Producers and the Eastern Nebraska Honey Producers. The meeting will be held at the Holiday Inn on cornhusker highway in Lincoln. A program of speakers and exhibitors will begin at 9 AM each day. A banquet will follow the meeting on Friday, November 18 and te new honey queen will be crowned.

The program wil include presentations of interst to both hobby and commercial beekeepers. All beekeepers from Nebraska and surrounding states are welcome to attend.

Further details of the meeting may be obtained by sending a self-addressed stamped envelope to: Howard Halbgewachs, Route 2, Box 73A, Cozad, Nebraska 69130. Phone: 308-784-4320.

Connecticut

The Connecticut Beekeepers Association Fall Meeting Notice

The Fall Meeting of the Connecticut Beekeepers Association will be held on Saturday, October 22, 1983 at the Connecticut Agricultural Experiment Station, 123 Huntington Street, New Haven, Connecticut, at 10:00 AM in the Donald F. Jones Auditorium.

The program will be:

10:00—11:00 AM — Business meeting.

11:00—Noon — Beekeeping in Vermont, with a special look at product promotion. Mr. Rich Drutchas, Dept. of Agriculture, Montpelier, VT.

Noon—1:00 PM — Potluck lunch.

1:00—2:00 PM — Mr. Ken Anderson, Director State and National Affairs, Connecticut Farm Bureau will speak the general relationship between beekeeping and the rest of the agriculture in Connecticut, bee product promotion and the spray-bee conflict.

The noon break will feature the ever popular potluch luncheon. Bring something you like for the buffet table. We will furnish the coffee. All beekeepers and friends are cordially welcomed to attend. The meeting usually adjourns between two and three o'clock.

Indiana

The Michiana Beekeepers Association will hold an auction bake sale as their fall fund-raising event Sunday, Oct. 16, 1983 at 2:00 (Indiana time). Attendance and donations are needed by members as well as non-members. Contributors have their option of donating items entirely or giving 20% of proceeds from sale of items to M.B.A. The auction is to enclude honey baked goods, plants, and anything pertaining to honeybees and the keeping thereof. All live honeybee colonies need to be tallied by the first week of October so they can be inspected. All donations from bee supply houses will be stressed at time of sale and more donations of this kind are needed.

The auction will be at the home of: Mr. & Mrs. Jerry Shaw, 10910 Anderson Rd., Granger, Ind. Phone: 219-674-9327 for directions.

Donations may be sent to: Mrs. Barbara Darsee, 63499 Elm Rd., Mishawaka, Ind. 46544. Phone: 219-633-4830.

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THE SCOTTISH BEEKEEPER — Magazine of The Scottish Beekeepers' Association, International in appeal. Scottish in character. Membership terms from A. J. Davidson, 19 Drumblair Crescent, Inverness, Scotland. Sample copy sent, price 20 pence or equivalent. TF

The INTERNATIONAL BEE RESEARCH ASSOCIATION urgently needs your membership and support to continue its work of publishing informatin on bees, beekeeping and hive products. Write for details about publications and the benefits of membership to USA Representative, H. Kolb, P.O. Box 183, 737 West Main, Edmond, OK 73034 (phone (405) 341-0984); or to IBRA, Hill House, Gerrards Cross, Bucks SL9 ONR, UK.
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BEEKEEPING. A West Country Journal—written by beekeepers—for beekeepers. 1.50p inland or 1.80p ($4.00 Overseas). 10 issues yearly. Editor, R. H. Brown, 20 Parkhurst Rd., Torquay, Devon, U.K. Advertising Secretary, C. J. T. Willoughby, Henderbarrow House, Halwill, Beaworthy, Devon, U.K. TF

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BEE CRAFT — Official (monthly) magazine of the British Beekeepers Association. Contains interesting and informative articles. Annual Subscription (Sterling cheque 2.22 p.or U.S. $6.) Post paid. The Secretary, 15 West Way, Copthorne Bank, Crawley, Sussex, RH10 3DS. TF

INDIAN BEE JOURNAL Official organ of the All India Beekeepers' Association, 817, Sadashiv Peth, Poona 411030. The only bee journal of India Published in English, issued quarterly. Furnishes information on Indian bees and articles of interest to beekeepers and bee scientists.
Annual subscription postpaid in foreign countries: For individuals US $7.00 for institutions, companies and corporate bodies US $10.00 or it's equivilent, to be received in advance by IMO or bank draft, payable in Poona (India). TF

WANTED

WANTED—All varieties bee gathered pollen. Must be clean and dry. Pollen traps available. Hubbard Apiaries, Onsted, Mich. 49265. Phone: 517-467-2151. TF

WANTED — Old Beekeeping Books and Bee Journals. James Johnson, 107 State Ave., Terra Alta, W.V. 26764. TF

Young experienced beekeeper wanted. Send resume. B-Appy Ranch, 26833 Tannahill Ave., Canyon Country,'Ca. 91351. BW 10/83

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WANTED—All grades of extracted honey. Send sample and price. Deer Creek Honey Farms, London, OH. TF

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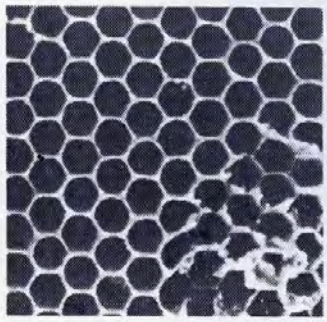

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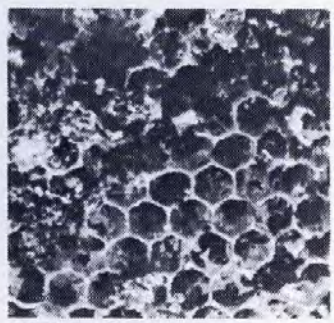

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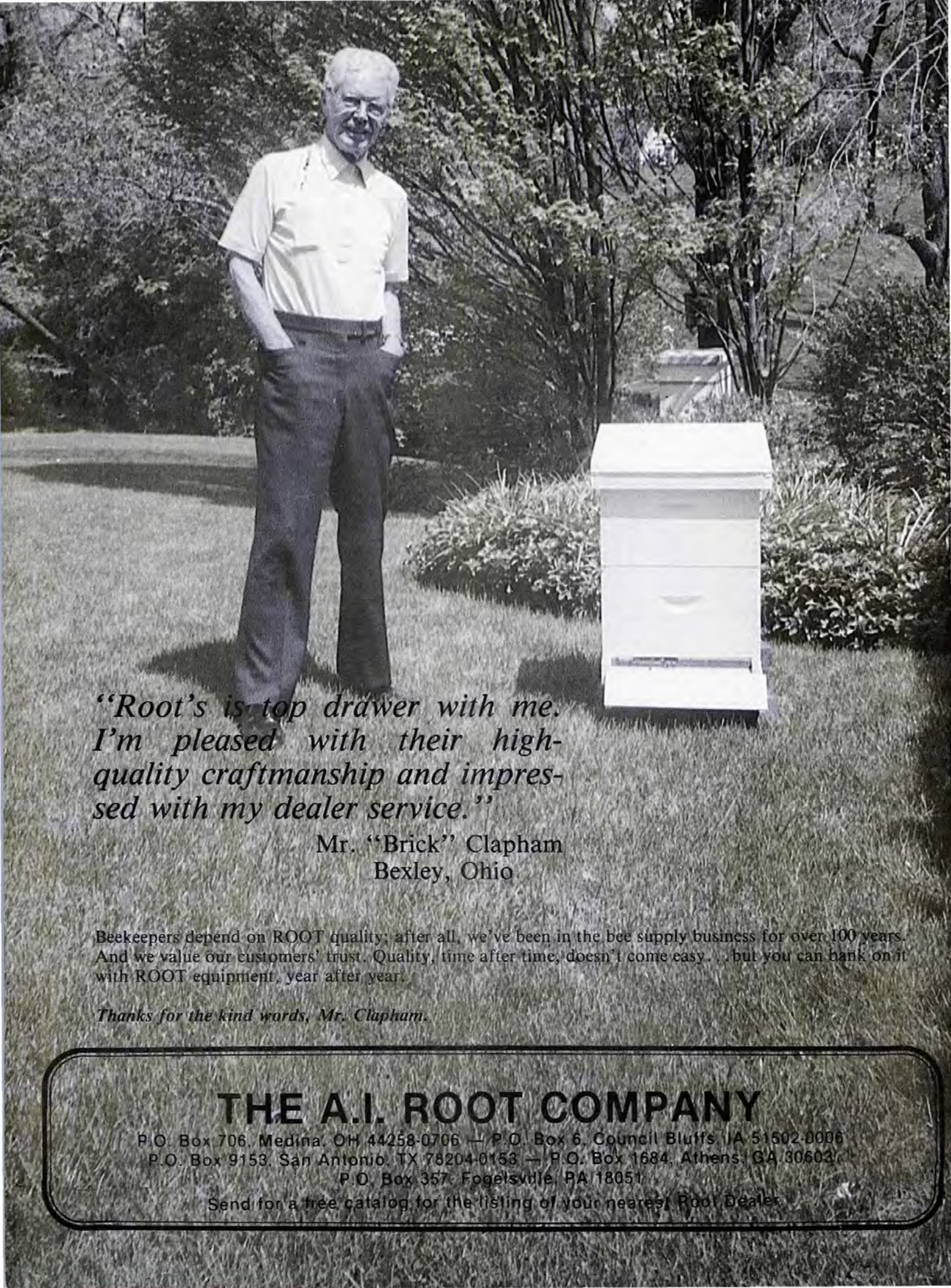

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