February 1986

GLEANINGS IN BEE CULTURE

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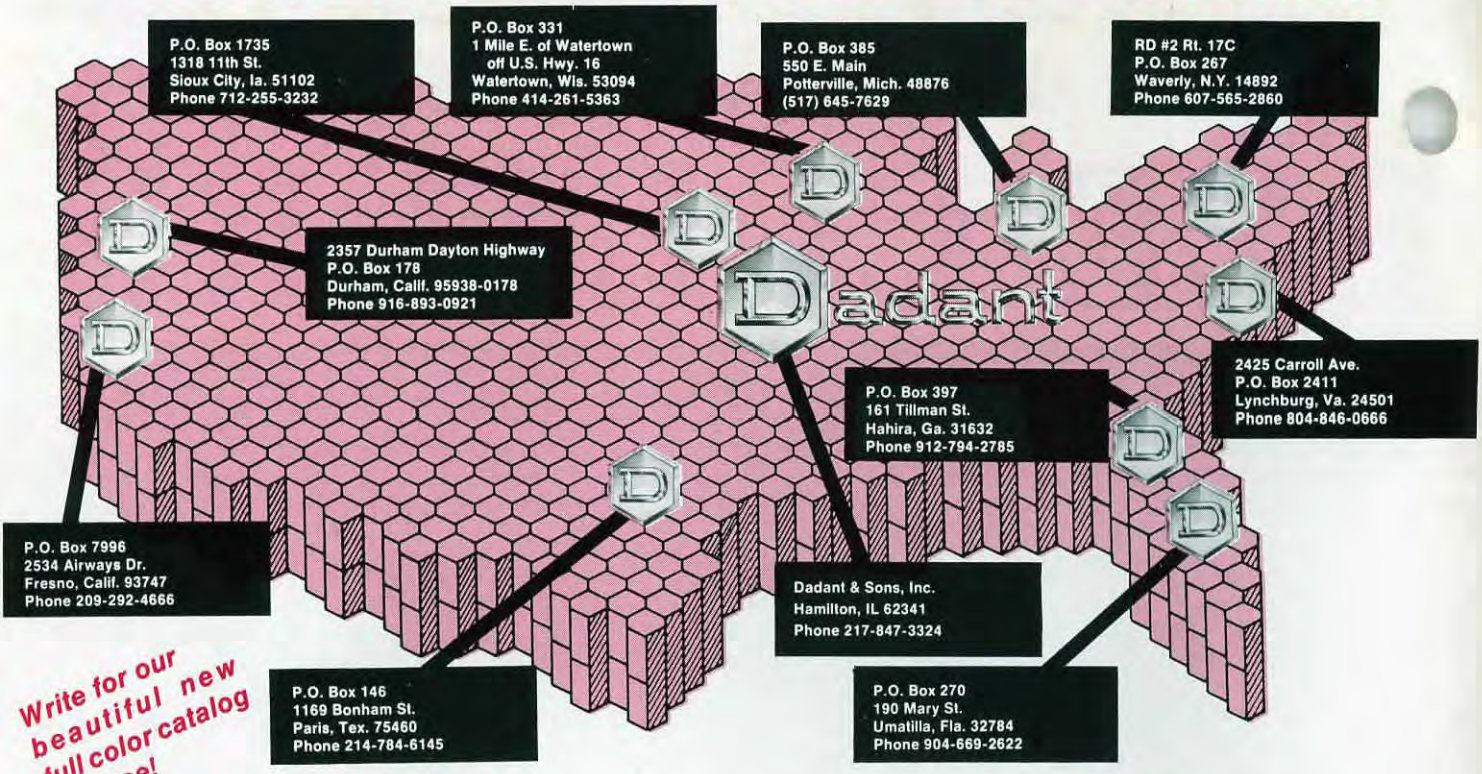

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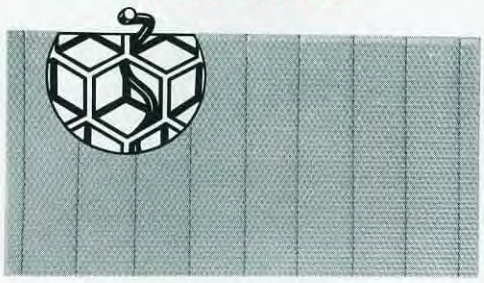

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GLEANINGS IN BEE CULTURE

Since 1873

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CONTENTS

COVER STORY

A typical snow scene in early February for the Northern U.S. and Canada, however, this picture was snapped in late fall. The owner of this hive has asked to remain anonymous, caught with not only the fall super still on in the first snowfall but also the excluder.

A very peaceful scene in contrast to the frienzied activity of summer.

Gleanings Mail Box

They Can't Import Pollination!

Dear Editor:

They **can** *import cheap foreign honey*
from south of the border and overseas;
But, as they do this, they put out of business
the stugglin' American guy who keeps bees!
For, if he can't sell honey, he can't make money,
he can't hive the swarms, he's down on his knees!
And soon, then, the farmer, **and** *the man with the trees*
will be searching in vain, and crying in pain—
Where's da bees?!!!

Bob Kling — Beekeeper
7210 Pittsburgh Road
Poland, OH 44514

Dear Editor:

We are a beekeeper's organization in Delft, Holland. There are about 100 hobby beekeeper members of our organization. The average number of hives is five.

If there are any American beekeepers visiting Holland, you can give them my address so that we can show them around our apiaries.

Maarten te Meij
v/d Mastenstraat 37-37[a]
2611 NX Delft
the Netherlands

Dear Editor:

I am a hobbyist beekeeper and I would like to make a comment on Mr. Cucullu's letter to the editor in the January issue of *Gleanings In Bee Culture.* Although I do not have many hives, I do produce round comb section honey. I for one am **definitely not** tired of reading about comb honey production. I wish there were more articles about it and not less. I would also like to say that it is because of respected beekeepers like Mr. Taylor that I subscribe to *Gleanings In Bee Culture.*

As for some of Mr. Cucullu's other comments, I can't help but wonder what he is producing out there in Arizona. Is it honey or vinegar?

John R. Marshall
Rt. 2, Box 175A
Unicoi, TN 37692

Dear Editor:

While vacationing in France lately, I was intrigued by rows of space-age shiny aluminum cubes in backyards. They were beehives.

France as about 100,000 beekeepers and approximately one million beehives in operation. The French produce some 30 milion pounds of honey per year. For a country barely the size of Texas, the density of production per square mile is about three times that of the USA. In spite of such volume of honey production, the hives have not changed for several decades. The hives are still made of wood and an empty hive still weighs in excess of 55 pounds.

The new hives consist of a collapsible aluminum frame with panels that slide into grooves. Each panel is made of reflective aluminum sheets glued on polystyrene foam. The entire hive is shipped as a kit weighing only 22 lbs. It can be assembled in a few minutes.

The main advantages of this hive are: no maintenance, no painting, very good thermal insulation (walls made of foam and reflective aluminum which deflects 80% of sun heat), does not favor parasites, does not absorb humidity (no mold or fungi), it is very hygienic, cleansing and sanitation can be done with hot or chlorinated water. First trials show a very promising increase of productivity. However, the price is still high (about $90 in France).

Another type of hive uses the same aluminum frame but part or all the walls are transparant (double wall of transparent plastic sheets with air space in-between, mounted on a rubber gasket). This polycarbonate sheet is as transparent as glass, but does not break and has better thermal and acoustical insulation capacity. It is fireproof and very stable to ultraviolet rays.

This transparent hive is like an aquarium, behavior can be observed without disturbing the bees. In addition, it has been observed that normal exposure to light changes bee behavior and makes them less aggressive. To protect the hive from excess sun heat, one or two sides can be shaded with a removable aluminum panel.

Sunlight has other beneficial effects: it inhibits growth of bacteria, acari, molds, fungi, wax moths, etc. all evils of the dark. Bees become more resistant to cold and hunger; their activity increases by one or two hours a day, and the queen produces two or three times more eggs. Honey production increases two to threefold. The price for the transparent hive is about $200 in France, too high for a commercial operation.

For about $75 (in France) the beekeeper can have a combination of the new and the old systems; that is: aluminum frame, three walls of traditional wood and one transparent panel.

Andre Beaugrand
837 McCullum Ave.
Elizabethtown, KY 42701

P.S. I am a retired plant manager of Bel Cheese Inc., a French cheese plant making Bonbel and "The Laughing Cow" at Leitchfield, KY. Feel free to publish all or part of my letter if you feel it can be of interest to your readers.

Dear Editor:

This letter is to inform you of the Department's intention to follow the recommendation of the Tracheal Mite Task Force to terminate regulation of that parasite.

A number of factors contributed to the Task Force's recommendation. Currently available techniques are incapable of reliably detecting low to moderate levels of infestation of the mite. Health certificates issued on the basis of such inspections have been ineffective in preventing mite infested hives from entering the state. The actions of other states to regulate tracheal mite have been equally ineffective in controlling the spread of this pest. Consequently, the mite is now found in twenty states east of the Rockies.

Given these facts, the Department's decision is to deregulate all activities related to the mite. The Department will formally deregulate using the State's normal rulemaking process.

This action does not lessen our intention to effectively regulate and control other pests and diseases of concern to Maine beekeepers whenever possible. In the near future we will begin a general review and revision of the laws and rules applying to the industry. Our objective will be to reorganize, strengthen and clarify these laws and rules. We intend to provide for more effective enforcement by substantially increasing penalties for violation. Another proposal will be a rule prohibiting commercial beekeepers from establishing colonies within a two mile radius of each other except for the purpose of pollinating blueberries and apples.

A hearing regarding these proposed law and rule changes will be held at some future time following the usual notification process.

Peter N. Mosher, Director
Bureau of Agriculture
August, Maine 04333

Resistance To Varroa?

N. Koeniger reports in the *Bee World lead article (Vol. 4, 1985) that although the Asian bee mite Varroa jacobsoni* is a major problem for beekeepers in Europe, the Middle East and North Africa who use *Apis mellifera,* the infestation starts slowly and by the third or fourth year the mites have a large enough population to substantially damage the colony. At this point the beekeeper has to treat, at least once, to reduce the *Varroa* population or there will be no crop.

In many parts of Asia where the *Varroa* mites encounter *Apis cerana it does little damage because it restricts it's reproduction to drone cells while with Apis mellifera,* all cells are invaded. This is definitely an area where study is needed to understand these differences in behavior.

Now for the good news — there is quite a bit of evidence that *Varroa* is not causing severe problems to colonies of Africanized bees. This has been demonstrated in Uruguay where mite populations increase very slowly compared to Europe; and again, in many cases, the mites do their dirty work mostly in drone cells. Keoniger states that it is a little too early to state that it is harmless in Uruguay, but this is encouraging. Understanding the factors that cause these differences could mean that the mites could be controlled without the expense and nuisance of chemical solutions, not to mention the possibility of crop contamination.

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The Monthly Honey Report

Jan. 10, 1986

The following figures represent the current prices reported by beekeepers and packers over the country. They are based on repor from many states averaged out for each region. Where insufficient information is received no price is shown. The retail prices repre sent 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	42.00	40.50	39.00	45.00	48.00	36.70	36.00	37.00	42.50
60 lbs. (per can) Amber	40.00	38.00	34.00	37.70	36.00	31.20	30.00	35.00	40.00
55 gal. drum (per lb.) White	.52	.52	.41	.46	.64	.55	.55	.58	.58
55 gal. drum (per lb.) Amber		.50	.38	.59	.54	.52	.54	.55	.54
Case lots — Wholesale									
1 lb. jar (case of 24)	28.50	26.40	24.90	25.04	38.40	23.40	24.00	25.38	28.35
2 lb. jar (case of 12)	27.50	23.40	22.75	20.89	24.80	22.65	21.05	31.15	29.64
5 lb. jar (case of 6)	30.00	28.50	23.87	26.07	28.50	29.25	21.00	25.25	27.68
Retail Honey Prices									
½ lb.	.90	1.09	.81	.86	.90	.90	.85	.86	.89
12 oz. Squeeze Bottle	1.50	1.49	1.30	1.20	1.75	1.25	1.35	1.21	1.19
1 lb.	1.50	1.84	1.44	1.42	1.85	1.37	1.50	1.51	1.40
2 lb.	2.70	2.75	2.72	2.34	3.55	2.39	3.00	2.77	
2½ lb.	3.35			2.86	4.60	3.25	3.50	3.38	
3 lb.	4.00	4.15	3.32	4.57	4.98	3.85	4.00	3.73	3.40
4 lb.	5.00	5.40		5.40	4.98	4.90	5.00	4.70	
5 lb.	6.00	6.50	5.00	5.39	5.75	5.77	5.75	5.60	5.25
1 lb. Creamed		1.75	1.49	1.29		1.39	1.45	1.59	1.52
1 lb. Comb	2.25	2.25	2.59		1.85	1.85	2.00	1.82	2.37
Round Plastic Comb	1.75	2.00	1.75	1.65	2.00		1.85	1.67	1.65
Beeswax (Light)	1.25	1.35	1.10	1.00	1.25	1.00	1.15	1.16	1.40
Beeswax (Dark)	1.15	1.15	.95	.90	1.10	.90	1.10	1.08	1.15
Pollination Fee (Ave. Per Colony)	26.00	20.00	27.50	15.00	30.00	21.00	27.00	18.00	25.00

REGION 1

Bees for sale at low prices. No one seems to want bees anymore. More money can be made doing other things. Even pollination needs have gone down as small orchard growers can't keep going without at least some profit. Small farms are being sold to build housing and many are letting their farms run down. Many beekeepers are giving their bees no care at all. This country will soon be a nice place to live but unable to feed itself. Why is it that only the farmers realize this? If beekeepers could compete on the world market we would be glad to export our products.

Honey is not selling. Wax prices are much too low. Bees in this area will need feeding but will not get fed, "no money for sugar".

REGION 2

Cold weather during December caused larger amounts of honey to be consumed this year over the last four years. The queen starts laying eggs later this month and the beekeeping cycle continues. Honey sales poor. Time has come for repairing and construction of hives for the upcoming year. Bees in good condition.

REGION 3

Honey sales are slow, but a little better than last year. Perhaps due to short crops elsewhere. Food stores being consumed heavily. Feeding beginning here in areas that didn't get fall flow. Acarine mite found in Ohio adjacent to Indiana, just of Fort Wayne. Illinois is just now completing its third statewide survey for the tracheal mite. Also the first statewide survey for varroa mite.

REGION 4

Winter came early and severe. Bees have been confined for several months and really didn't have a chance to haul out their drones in the fall because of confining weather. If we don't get a good January thaw pretty soon, there is reason to be concerned about heavy winter losses.

Honey sales were good through the Holiday season but are slow now.

REGION 5

Local honey about sold out during fairs and local farmers markets, however, store sales have been very slow. A lot of cheaper honey being sold as sourwood for $1.29 lb. It sure doesn't taste, look or smell like the sourwood honey we make here and in the mountains. The labels state packers and producers of honey. Does not tell where it is from or who produced it.

REGION 6

December temperatures have been below normal but bees are in good condition and have much better stores than a year ago. Beekeepers are satisfied with their crop except those in eastern foothills region. Those holding largest amounts of honey have lowered their price somewhat for bulk honey during the year. No honey will be sold to support program.

REGION 7

The 1985 honey year in this part of Oklahoma was very unusual. We

came out of 1984 with the worst year on record. No surplus honey and no fall honey flow. Bees went into winter with very few young bees and very little honey. Many colonies died. The spring build-up was very slow and almost no swarming. Honey flow didn't start till last of May. Then turned out to be the best year in the last ten. Light mild flavored honey and an average of about sixty pounds per colony. The colonies that did survive the winter in good enough condition did build up to working condition and make a surplus of honey.

Honey sales are slow for this time of year and 95% of honey on grocers shelves is from a foreign country. Some prices are as low as $2.50 a quart.

With the cost of jars, fuel and equipment the large honey producer cannot compete and stay in business. In fact small commercial beekeepers won't make it if they don't have a good sideline of somekind. The answer I do not have as long as our government is willing to let every country in the world dump all the honey they have into our market and then continue to enlarge the stockpile of honey they have paid our beekeepers because it's going to have to go some place and soon. And that isn't hard to figure out what it will do to our market.

REGION 8

A break in the extreme cold weather during the last week has given the bees a much needed cleansing flight. Hopefully stores will be adequate since most bee yards are snowed in and impossible to reach.

Consumer demand has been good and shelf prices have remained stable.

Montana's crop had great variation in production per colony from zero to 150 pounds per colony. It is difficult to pinpoint an average until more is learned. Commercial beekeepers were not satisfied with results of drought and grasshopper spray programs. Severe winter weather arrived early November and a weather break arrived just before Christmas with temperatures in the 50's. Chinook winds evaporated the snow and by the end of the year winter weather returned to eastern Montana. Colonies slated for California were delayed due to adverse weather in the bee yards. The warm break permitted a cleansing flight and chance to transport colonies to warmer climates.

REGION 9

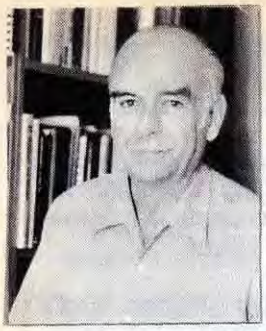
The month of December was a little big warmer in Washington. Temperatures averaging in the 20's with lots of foggy days. Extremely dry in North Central Washington while most of the rest of the state has plenty of snow. Honey sales were a little better than average around the holidays. Lots of gift packs of honey being offered from many different beekeepers and areas

Tips From Amos Arbee

If you are one of those people bothered with getting to sleep, try the following in place of whatever you may now be taking or using.

Right before retiring for bed, toast a couple of slices (preferably with no additives) of your favorite bread. Spread each slice rather sparingly with honey and drink with a cold glass of milk.

Perhaps you may have just discovered a sleep remedy which is both nutritious and healthful, not to mention the better rest you acquire.



The Bee Specialist

Elbert R. Jaycox, PhD.
5775 Jornada Road North Las Cruces, NM 88001

Getting Started

This is the second time I have begun a new column for a magazine. Perhaps this one will continue longer than the first, which was terminated when the content of my column conflicted with the claims of an advertiser who placed expensive color advertisements in the magazine for which I wrote. Many people have since demonstrated that the product was worthless, but I never was invited back.

The content of columns usually reflects the experience and philosophy of the persons writing them. In my case, it may also relate to my writing experience and style. For a number of years I've been writing newsletters about bees and beekeeping, originally in Illinois and now in New Mexico. I believe a column, like a newsletter, should cover a variety of topics, usually not in great depth. Occasionally, though, it is stimulating to both writer and reader to investigate one topic in more detail. In general, if you read this column, you can expect to find many subjects, some controversial, from one-liners to full length.

A New Look At Comb Spacing

One topic we've been arguing about for years is how to space the combs (frames) in the brood chamber. I have always used nine frames in a 10-frame box because the convenience of manipulating frames with more space between them seems more important than a proper bee space and more combs for the queen. But Glen Stanley, Iowa State Apiarist, says that he likes to correct his past mistakes, and he finally converted to using 10 frames in brood chambers after years of using only nine. Glen says you get more burr combs and more drone cells with the wider spacing of nine frames. He also believes that the brood is kept warmer with 10 frames in a box. Other factors to consider are the time required to space the nine frames and their tendency to "flop" when the hives are moved, according to Glen.

In his fine new book, *Practical Beekeeping in New Zealand*, Andrew Matheson discusses how New Zealanders have solved the problem of frame spacing in the brood chamber. They have simply reduced the width of the Hoffman-style end bars by 2 mm to 33 mm. Originally, they were 35 mm or $1^{3}/_{8}$" inches as ours are. Most manufacturers have converted to this size in New Zealand, and beekeepers still space out the frames to use eight or nine in each honey super.

The Australian Beekeeper seems to agree that the added space in the brood chamber is a good idea. They are not so pleased that manufacturers have been forced to produce **both** end-bar widths because of beekeeper resistance to using the new size. Commercial beekeepers in Australia wonder about mixing the two sizes and seem to be content with nine frames in a 10-frame box.

The idea of narrower end bars is worth trying. I see no serious problem in mixing the two sizes, since we don't always space the frames evenly now.

Are More Beekeepers Allergic?

In the 1950's, one in seven people was considered allergic. By the 70's it jumped to one in five, and now is estimated to be one in three or about 75 million people. There are several reasons for the changes, which could certainly affect beekeepers. One is the better recognition of allergies. There are also more substances in the environment to cause reactions. Another reason is that the genetic (hereditary) and biochemical makeup of people is different in the 80's from what it was in the 50's. We now have many first and second generation descendants of people who would never have survived without antibiotics, insulin, and other modern therapies, perhaps including adrenalin (epinephrine) for reactions to honeybee stings. A.S. Levin and M. Zellerbach discussed this subject in an article in the *Philadelphia Inquirer*.

Frances Bevan, writing in *The Beekeepers Quarterly*, noted that several beekeeping acquaintances have been forced to quit keeping bees because of suffering anaphylactic shock after being stung. Each one had recently begun to take medicaton for arthritis and inflammation of vertebrae. Another beekeeper friend of Bevan's with back problems has found that he gets a really massive swelling from bee stings when taking medication. When not taking the drug, his response is minimal. Doctors could use additional information about these interaction between medications and bee stings.

No Miracles From Plastic Hives

In 1985, most of the bee magazines carried large ads by a German company, which offered dealerships for a new miraculous "synthetic" (read, "plastic") hive. The magical properties of the hive make bees emerge three to four days early, make them live twice as long in summer and five to six weeks longer in winter, and completely prevent swarming. Even queens raised in the hives are more productive, according to the advertisement.

I hope you did not waste a stamp or invest in this product because of their false and misleading claims. It is not possible to make those changes in individual bees and a colony just by using a different material for the hive construction. The unfortunate part of the story is the uncritical acceptance of the advertising. Only the German Beekeepers' Association took notice the claims and has been working to suppress them. There should have been more comment by editors to protect the gullible beekeeper from thinking he had found the perfect hive.

Sweetening Up The Cattle

According to *Bienenstich*, a Swiss beekeeping newsletter, many farmers give their cows special care and attention. During calving, they may give the prospective mothers a bottle of strong coffee laced with schnapps. A farmer in southern Switzerland gives his cows a somewhat different treat just after they have calved. They get a huge slice of good Swiss bread, butter and honey. The farmer considers it both a pick-me-up and a reward, with a bigger helping of honey when the cow produces a fine, stronger heifer calf.

Another person who treats his cattle is Paul Windham of Elba, Alabama. He injects five gallons of blackstrap molasses into each round bale of hay he feeds his Charolais cattle. The cattle eagerly eat the sweetended hay, which he says gives them more energy than the plain product. Windham pays 65 cents per pound for the molasses.

With the current price of honey and the obvious value of the carbohydrates for pampered cattle, beekeepers should promote the wider use of sweetened hay — but let's make it honey hay.

Treating Hives

Many wood preservatives are no longer acceptable for treating bee hives and other wood products. One approved material is copper naphthenate (Cuprinol), which is effective against rot and mildew in wood and fabrics. The compound is green and imparts a green color to the treated product.

M.J. Bragg, of the Okie Bee Farm, Boswell, Oklahoma, says he has used the following mixture for treating his hives and it works well. After it has been applied to new wood and weathered for about a year, he paints over it with latex paint.

Dissolve one pound of paraffin wax in one-half gallon of paint thinner overnight. Add one-half gallon of boiled linseed oil and one gallon of Cuprinol and mix well. Apply to bottom boards and other wooden equipment when the temperature is above 50°F (10°C). The mixture is flammable: do not expose it to heat or open flame. Avoid skin contact and use it with adequate ventilation.

Postscrip

If you have comments, ideas, or questions about the column, please don't hesitate to write. I would particularly like to know what subjects are of special interest to you.□

QUESTIONS & ANSWERS

Q. The December '85 *Gleanings* referred to a warming box heated with light bulbs used by Duane Waid for melting granulated honey. How can I make such a box? How long does it take to liquefy granulated honey in it? Can jars of granulated honey be reliquefied in such a box?

Richard Dieter
Willoughby, Ohio

A. A lot of readers have asked about this warming box. It is nothing but an insulated box large enough to hold two 60 lb. cans or pails of honey. It could be made larger. The cans of honey are set on slats, underneath which are two 100-watt bulbs. Probably just one such bulb would work, but it would take longer for the honey to melt. Mr. Waid's box is about 26″ long inside and 13$_0$ wide. It is about 18″ deep, not counting the space underneath where the light bulbs go, which is about another 6″. The president of our bee club here, Mr. Earnest von Borstel, just uses a discarded refrigerator for a warming box, and he warms it with only two 40-watt bulbs. He says it takes up to three days for the honey to melt. Mr. Wade's box melts two cans in just one or two days. No matter what sort of insulated compartment you use, or how many light bulbs, you have to be careful not to leave the honey in too long or it will be ruined. Check from time to time by poking a wire down into the can. You can melt jars in such a box as well as cans. Leave the lids on but slightly loosened. As for the construction of such a box, in case you cannot find an old refrigerator hull, it can be fairly crude. Just nail the box together, leave a space in the bottom for the light bulbs, nail a few slats around the outside, stuff insulation between these, then tack on the outside. Have it open from the top rather than from the side.

Another version of such a box would be one in which the cans were laid on their sides, tilted up, so that the honey runs out as it melts. In this case the melted honey should run, via a trough or fair sized pipe, right out of the box as fast as it melts, and into another receptacle. It will in this case be not completely melted, sort of a liquid sludge, but the honey might be of better quality, having been subjected to less total heat. The cans of honey sludge would then need to be liquefied in a hot water bath. This would of course be an extra step but, I think, worth the extra trouble.

— Richard Taylor

Q. Is it a good idea to "bottom super," that is to add empty supers underneath partially filled supers already on the hive?

Marshall T. Slotterbach,
Sellersville, PA

A. Not unless you are running your bees for comb honey. Some beekeepers imagaine that bottom supering will cause the bees to redouble their efforts to get the supers filled, but that has not been my experience. When raising comb honey one must keep the almost-filled supers at the top of the stack in order to reduce travel stain.

— Richard Taylor

Q. Do the bees fill the end frames of round comb sections better when there are eight frames instead of nine?

Rev. Clarence H. Bopp
Kirkwood, MO

A. I believe they do, but I have met comb honey beekeepers who dispute this.

— Richard Taylor

Q. Would it make sense to try to raise comb honey on drone foundation, thus increasing the ratio of honey to wax?

Dick Johnson
Cranford, NJ

A. Drone foundation has been manufactured for this purpose, but I think the advantage would be very slight, if any. Excessive wax in comb honey results from the foundation being drawn when the weather is too cool, as in the fall. Drone comb is also very attractive to the queen, for egg laying.

— Richard Taylor

Q. Can you store sticky extracting combs with paradichlorobenzene moth crystals, or would it be better to let the bees clean them dry first.?

Gary Mattes
Manteca, Ca

A. It is not a good idea, for the honey absorbs the odor of moth crystals. But if you can stagger the supers in such a way as to air them out good for a couple of weeks before returning them to the bees, then the bees will probably remove any traces of honey with odor before storing new honey in the combs.

— Richard Taylor

Q. When should a pollen trap be used, and when should it be closed down? What do you do about the trap when wintering the bees? Is there a quick and easy way to dry and clean pollen for sale?

George Cross,
Oshkosh, WI

A. A pollen trap can be used at almost any time, but I would avoid using it in the spring, when the bees are building up, and it should also not be used during periods of wet weather. No pollen trap should be left on a hive over winter. I have dried pollen successfully by spreading it in trays and leaving it for a few days in a warm dry attic, but protected from mice. I know of no way to clean it other than hand picking out foreign things such as bees wings, etc. Although I have had no confirmed report of pollen contaminated by insecticide, I believe any pollen trapper should contemplate the possibility.

— Richard Taylor

Testing Your Beekeeping Knowledge

by CLARENCE H. COLLISON Extension Entomologist The Pennsylvania State University University Park, PA 16802

Many of our serious insect pests in the United States were either accidentally or intentionally introduced from other parts of the world. Prime examples include the Japanese beetle, gypsy moth, hessian fly and face fly. The beekeeping industry is not without similar problems. Within the last two years, two new potential problems have been found within the United States: the honeybee tracheal mite and the Africanized honeybee. Also, the feared Varroa mite was isolated from a small swarm of Africanized honeybees on a ship that traveled down the St. Lawrence Seaway and into the Great Lakes during the summer of 1984. Subsequent surveys, however, have not found the mite in adjacent apiaries.

How familiar are you with the Africanized honeybee, the Varroa and honeybee tracheal mites? Take a few minutes and answer the following questions to find out how well you understand these important pest problems. The first 15 questions are true and false. Place a T in front of the statement if entirely true and a F if any part of the statement is incorrect. (Each question is worth 1 point).

1.____ The honeybee tracheal mite is a more serious parasite of honeybee colonies than varroa mite.

2.____ Female varroa mites lay their eggs in brood cells containing larvae just after the cells are capped.

3.____ Varroa mites prefer to parasitize drone brood.

4.____ Africanized honeybees have been introduced into the United States prior to the recent California find.

5.____ The Africanized honeybee has moved through South and Central America at a rate of 500-800 miles per year.

6.____ Venoms of Africanized and European honeybees are chemically different.

Africanized honeybees in comparison to European honeybees:

7.____ have a higher incidence of swarming.

8.____ exhibit greater hoarding behavior.

9.____ respond faster and in larger numbers to alarming stimuli.

10.____ have a higher tendency of absconding.

11.____ are slightly larger in size.

12.____ build combs that are made up of slightly smaller cells.

13.____ have faster developmental rates.

14.____ fly at lower temperatures and at lower light intensities.

15.____ live longer.

Multiple Choice Questions (Each question is worth 1 point)

16.____ The Africanized honeybee is a subspecies of the European honeybee and is known as:

A) *Apis mellifera mellifera*

B) *Apis mellifera ligustica*

C) *Apis mellifera carnica*

D) *Apis mellifera scutellata* formally *adansonii*

E) *Apis mellifera caucasia*

17.____ Adult honeybees less than _____ days of age are most susceptible to the honeybee tracheal mite:

A) 9 days

B) 15 days

C) 12 days

D) 18 days

E) 6 days

18.____ The honeybee tracheal mite was first found in the United States in the state of:

A) Nebraska B) Florida C) Texas

D) Louisiana E) South Dakota

19.____ The varroa mite and bee louse, *Braula coeca*, are somewhat similar in size and appearance. How could you easily distinguish between adults of the two species? (Question is worth 2 points).

ANSWERS ON PAGE 95

Bee Talk

By RICHARD TAYLOR
Route 3
Trumansburg, N.Y. 14886

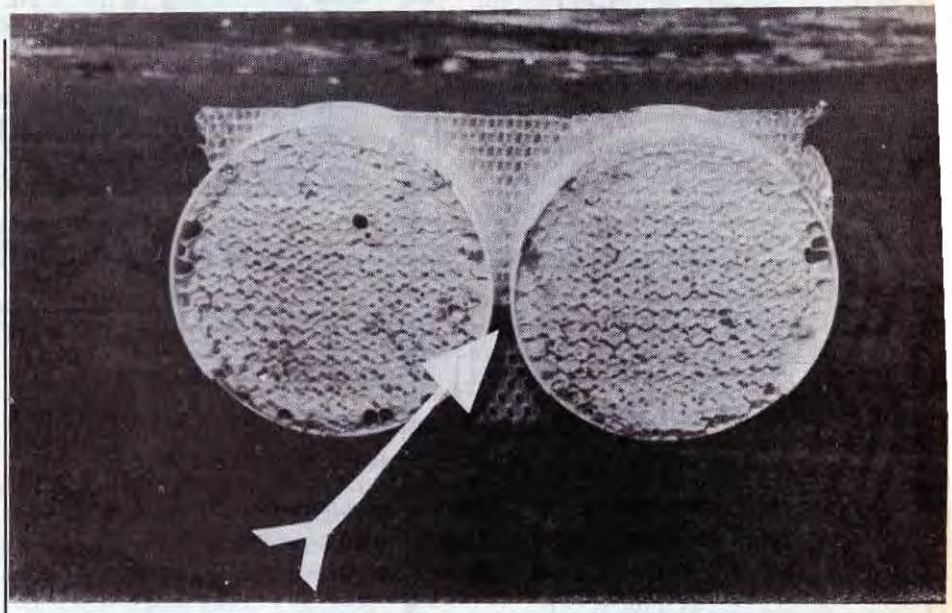
This is a cold winter day, the kind of day I am apt to spend mulling things over and thinking of spring. The bees are out there shivering, and I'm by my warm stove mulling things over. The bees do actually shiver, after a fashion. At least I read that recently. They move their little muscles rapidly, generating heat. The bees on the outside of the cluster, as they become chilled and torpid, move inwards and the warmer bees take their turn on the outside. This always astounds me, each winter, when I look out at some of my hives, so seemily lifeless and cold, and I realize that within them the life of the colony is steadily maintained. The bees mark time and wait for spring, as I do; but they, I think, are more patient.

I've been keeping bees for a long time, but I still learn more every year; not just from reading what others have learned, valuable though that is, but also from experience. One would think that by this time I should have learned all the ins and outs of apiary management, but I'm sure I have a lot to learn still.

This year, as usual, I just went for comb honey, and I produced an awful lot of it, in spite of the fact that everyone was complaining about what a poor year it was. So even though I know I did a few stupid things, I must also have done something right. Here are some of the things I learned.

First of all, bait sections don't seem to be worth much. I think I mentioned this before. I made up maybe 20 or so comb honey supers with bait sections, marked these with thumb tacks, and left the rest without the baits. the results seemed to be the same in both cases. The bees went to work in the supers without baits just as readily as in those with them, and the supers got filled with honey at about the same rate in both cases. So I don't see much point in using bait sections anymore.

Another thing I learned was how to get unfinished sections finished up nicely. Sometimes the sections to the outside of the super, and especially those in the corners, are not quite capped over when I harvest the super. Or sometimes one side of a section is beautifully capped and the other is not capped over at all. I learned that the thing to do, when you have 30 or more of these unfinished sections, is to put them all in one super and give the super back to the bees. Of course any fool would know enough to do that, but what I learned was **how** to put those unfinished sections into the super. You want to put the ones that are most nearly finished to the outside, and the least finished ones in the center. Also, when one side of a section is better capped over than the other, put the side that is most nearly capped over to the outside. That is more important than you would think. The result of this is that the sectons will all get finished up at about the same time, and all, or nearly all, will be of fine quality. If you do not do it that way, then you end up with some sections badly travel stained and other still unfinished.



Round sections started with two strips of foundation instead of full sheet.

Still another thing I learned, although I already more or less knew it, is that you do not need to use full sheets of foundation in the sections. I ran low on foundation at one point, so I had to stretch what I had. I did this by using a strip of foundation at the top of each section and another at the bottom, leaving the center without foundation. Frames that were fitted with foundation in this manner were alternated in a few supers with frames having the full sheets. I could not see any difference in the result. The accompanying photograph shows two such sections that had only strips of foundation in them, top and bottom, a fairly wide strip at the top and a narrow one at the bottom. The space between the two strips can be seen between the two sections, though not, I regret, very clearly.

I also learned something about propolis. I had left over the previous season a few sections that the bees had not drawn out at all. One always gets a few of these. But the bees had deposited a ring of bright red propolis clear around the edges of the foundation on both sides. I wondered whether that ugly propolis would be visible in the sections if I gave them to the bees to fill up, so that

is what I did. The sections were drawn out beautifully, filled and capped over and not a trace of propolis remained.

And finally, I learned that I really had better practice requeening in a methodical way. There is no doubt at all that some colonies make nicer comb honey than others. Some cap the sections over nice and white, while others plaster the cappings down against the honey so it does not look very white even when there is no travel stain. Other colonies have their own idiosyncracies. For instance, I sometimes come across a colony that likes to put a bit of burr comb in the middle of every section, so that when I remove the sections from the frames a few cappings right in the center get pulled off and the section drizzles. That is especially maddening. And what it all comes down to is that some bees are a lot better at making comb honey than others. So I'm going to start keeping records on this, and the colonies that fall short will be mercilessly requeened. I say this with regret, because I do not like the idea of killing a queen bee. But I'm finally going to let reason triumph over sentiment and make myself a better comb honey beekeeper. Maybe I'll even be able to develop such a fine strain of queens that I'll go in for queen rearing, aiming at the needs of comb honey beekeepers like myself.

[Questions and comments are welcomed. Please be brief and to the point, and enclose a stamped addressed envelope.]

Research Review

By DR. ROGER A. MORSE
Department of Entomology
Comstock Hall
Cornell University
Ithaca, NY 14853

Resistance To Varroa Disease

Worker bees in races from Africa develop in 19 to 20 days versus about 21 days for the European honeybees. In tests conducted in Germany with the Cape honeybee, from the southernmost tip of Africa, this made a profound difference in the development of *Varroa jacobsoni* mites. Only about 21% of the mites had time to complete their development when they were in cells with Cape bee pupae.

According to the data we have, female mites that move into brood cells lay their first egg about 60 hours after the cell is capped. The first egg laid develops into a female, the second a male and the rest are females. Another 170 to 200 hours are required before the first female mite is full size; males develop in a shorter period of time. Yet another 24 hours are needed before the outside surface (cuticle) of the mite is hardened and tanned. Only after this occurs can the mite mate, move out of the cell, attach to an adult worker bee and eventually continue the infestation. While the first female mite that develops might have the time required, her sisters that result from eggs that are laid later, do not. Under these circumstances the infestation remains low and is not too much of a problem.

Varroa jacobsoni causes the most serious of all bee diseases. Colonies of untreated European honeybees in temporate areas usually die soon after they become infested. At present, the mite infests bees in at least five of the southernmost countries in South America and the information we have suggests it is moving north toward Central America at a rapid rate. It will probably reach the United States in ten to fifteen years and perhaps sooner. At this time we do not have sufficient information to control it.

The research reported here suggests that bees from Africa have some resistance to the disease. It is possible we might find that the importation of some African genetic material might be of assistance in combating the disease if and when it arrives.

Reference

Moritz, R.F.A. and H. Hanel
Restricted development of the parasitic mite *Varroa jacobsoni* Oud. in the Cape honeybee *Apis mellifera capensis*. Esch. Zeitschrift fur Angewandte Entomologie 97:91-5. 1984.

Improving Almond Pollination

In small almond orchards, those with 40 or fewer acres, it is possible to place honeybee colonies near the edges of the orchard and to have all of the flowers receive a sufficient number of bee visits to set nuts. However, in the case of larger orchards, those with 70 or more acres, it was observed that fewer bees were visiting the trees in the center and nut yields were lower. Placing colonies of honeybees in the center of the orchards is time-consuming, difficult in mud or rain, and the bees are a nuisance for tractor operators that must work their machines along the rows. Still, the authors below, "encourage putting colonies inside the larger orchards where it is convenient" — however — "this or a similar modified bee drop pattern" may be satisfactory.

It was found that trapping pollen at colony entrances had a positive effect on almond pollination. We are aware from earlier studies with other crops that trapping pollen from a colony causes that colony to send out more pollen foragers. Keeping pollen traps on colonies for more than a month may reduce brood rearing and have an adverse effect because the colony does not have the protein it needs for brood rearing.

More colonies of honeybees are rented for the pollination of almonds than any other single crop in the United States. This makes observations of bee behavior on almonds of special importance.

Reference

Loper, G.M.R.W. Thorp and R. Berdel
Improving honeybee pollination efficiency in almonds. California Agriculture 39(11-12):19-20. 1985.

The Sting's the Thing

The above title is taken from a recent paper that asks how social insects evolved or came into being. There is no question that social insects have a very special problem. Any group of insects represents a great source of food for predators and parasites; those that hoard food are even more tempting.

Dr. Starr argues that social insects could not have come to exist without being able to protect themselves in some very special way. Living socially, with cooperative brood care, reproductive castes (i.e., specialized queens) and overlapping generations occurs in only two insect groups, representing only about five percent of the known insect species. These two groups are the termites and the stinging ants, wasps and bees. Social forms evolved only once in the termites, or stated another way, all termites are closely related and trace their origins to one ancestor. Termites protect themselves by hiding, often in mounds that are cement-like and difficult to penetrate.

Among the stinging insects social forms have arisen at least 12 times. This testifies to the special value of the sting, says Starr. It is interesting that among the stinging insects the males contribute almost nothing to the

colony. They are short-lived and their sole role is to mate. Insofar as defense is concerned the males are unfit to be workers because they cannot defend themselves.

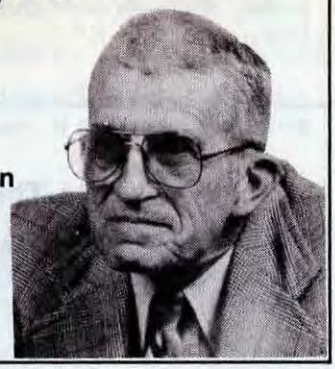
All of this is, of course, theoretical, and is the stuff one may argue about forever. However, there is still the fundamental fact that there are one million or more species of insects on earth and only a few are social. Perhaps the evolution of the sting was critical for this to have occurred.

Reference

Starr, C.K.
Enabling mechanisms in the origin of sociality in the Hymenoptera— The Sting's the Thing. Annals of the Entomological Society of America 78:836-40. 1985.

The Washington Scene

By GLENN GIBSON, President
American Honey Producers Association
Minco, Oklahoma



Minco, Oklahoma — Dec. 23. The big news here is that we salvaged a fair spot in the new Farm Bill of 1985. The gist of our section is:

". . . . The price support (for honey) will be reduced from the present level of 65 cents a pound to 64 cents for 1986 and 63 cents for 1987. In the following three years the Secretary of Agriculture would be authorized to provide reductions of up to five percent annually and to implement a marketing loan. . . ."

Our objective since the 1982 convention was to retain our 1949 support program and get import relief. These several convention resolutions gave us authority to negotiate a compromise if ONE became necessary. Plans for implementing these resolutions were worked out at our Orlando convention in Feburary 1982. The new measure, which fell a bit short of our goal, addresses the import problem and gives us marketing stabilizing loan levels.

Producers can still get loans at rates outlined above and may forfeit their honey to satisfy the loan as was the case in the 1949 law. The market loan provision offers the producer an opportunity to sell his production at the world price and pay his loan at a rate set by the Secretary of Agriculture. Subject payback amount will be set low enough to keep honey out of the government warehouses.

CONGRESSIONAL FRIENDS TELL US THAT WE CAME OUT OF THE FARM BILL DEBATE SMELLING LIKE A ROSE. ESPECIALLY SO, CONSIDERING THE HEAVY DIE-HARD OPPOSITION FROM THE SECRETARY OF AGRICULTURE AND THE QUALYLECONTE FACTIONS. TIS CHRISTMAS AND ALL IS RELATIVELY QUIET ON THE POTOMOC. SO — OUR FIRST ORDER OF BUSINESS IS TO EXPRESS OUR APPRECIATION AND THANKS!!!!!

Thank You

On behalf of the membership I want to thank everyone who helped from the smallest deed to the "all out". Special thanks and recognition should go to Richard Adee, Jack Meyer, Jr., and Berna Johnston for their continuous help during these last four years. This trio spent big bucks of their own money traveling to and from Washington — not once, but several times. Without realizing it they were a committee of summit planners.

Especially, we are grateful for the efforts of the Kansas beekeepers who did the necessary "back home" work to get Senator Bob Dole's support. A bunch of thanks goes to Steve Klein, President of the Minnesota Beekeepers Association, for his success in changing Senator Rudy Boschwitz from an opponent to a hard-core supporter.

Hundreds of letters and scores of telephone calls were directed to Washington from beekeepers. I would be neglectful if I didn't mention the "above and beyond" workers. The congressional delegations from South Dakota, Arkansas and Iowa gave us solid support — proof positive that producer contact is effective. Mr. Beekeeper, your letter did help!!!

Last, but certainly not least, thank to 30 beekeepers who took time fror their business and paid their expense for the express purpose of workin with me in the halls of Congress thi year. Collectively their total travel ex penditures exceeded $20,000.

AHPA Office Activities

During the year we sent out or hand delivered more than 30,000 pieces o propaganda. Subject material mainly stressed one subject — save the honey program. About 50 percent was sent to the beekeeper and the balance to certain members of the Media Elite and Washington. I made 10 week long trips to Washington. Richard made five and Jack Meyer, Jr. made five. We needed to do more, but funds were limited.

Ready For The Conference Committee?

To say that we had things in the bag would have been an open invitation to do nothing. We knew that working the Conference Committee would be rough. A nose-count of the conferees told us that we had the blessing of the majority, but congressional friends warned us many times that we needed to work around the clock and be sure that our support materialized at the CRITICAL MOMENT (This came when Senator Bob Dole and Congressman Tony Coehlo said the necessary few words in our behalf.)

A sound basic rule of lobbying is that the most effective work is done well before the debate becomes heated. Our four year campaign of urging beekeepers to contact their congressional delegations was most certainly a productive effort. Satisfaction with our past efforts and the encouragement from industry members gave us a confident feeling that we could win, especially so, after we met with officials of the American Beekeeping Federation and the Sioux Honey Association. After discussion all groups agreed that we should work for the plan that was finally adopted. This proves beyond a shadow of doubt that we can agree if lines of communication are opened. POW-WOW's among industry leaders at the scene of action is a mite different than adopting resolutions at conventions.

Did we need a professional from Washington? We didn't think so. If groups are uneasy and are puzzled about procedure in bureaucratic Washington, I would urge them to hire a lobbyist.

Henceforth?

What lies ahead for the honey producer? Certainly not a bed of roses. The new farm legislation is only a short reprieve. We must not let associaiton moribundity (stagnant-near death) set in. Rigor Mortis will quickly follow. There is now a greater need for a heavy campaign in Washington than heretofore because we now have a chance of making some real gains. All of our old problems are still with us. Solutions will come only from heavy industry work in Washington.

Moribundity is the uncritical and continuing acceptance of an organization's resolutions, programs and allocation of funds over a period of time even though their acceptance by the majority may be in doubt. It is mindlessly doing the things the way they have been done before. It is also blithely telling us that the STATUS QUO in any effort is a success. Justification for this motheaten approach is to remind one and all "Don't tamper with success" and "If it ain't broken, don't fix it."

Hopefully, the AHPA will continue to avoid this approach to inaction.

Please Do This

Mr. and Mrs. Beekeeper, join our association and become a part of the action.

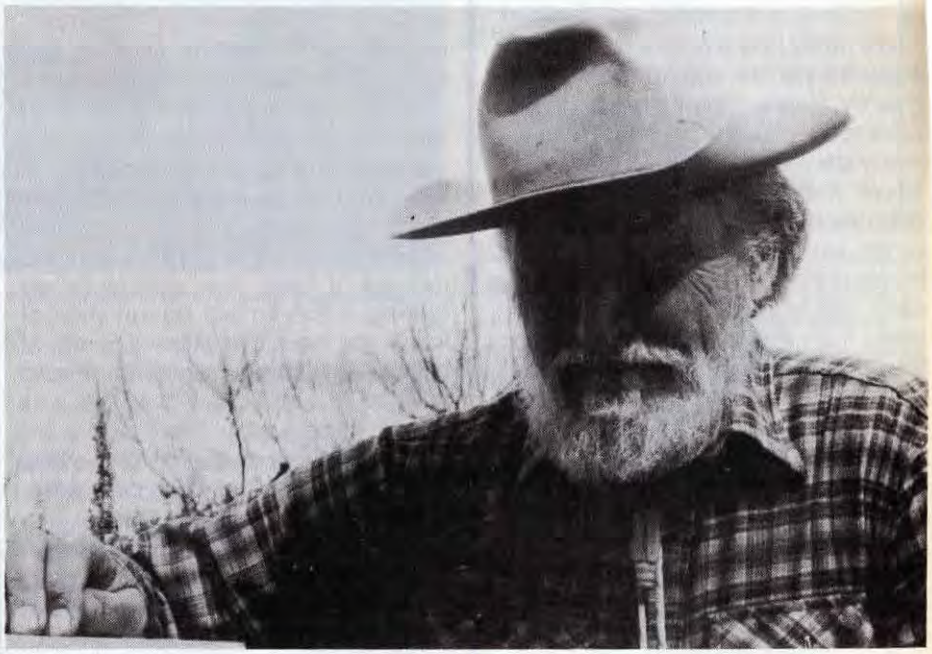
The Worst Bee Disease

by STEVE TABER of TABER APIARIES 3639 Oak Canyon Lane Vacaville, CA 95688

With the title "The Worst Bee Diseases", are you thinking of foulbrood? the acarine disease? the internal parasitic mite? the varroa mite? It's none of those. Think a bit; what kills more bee colonies every year all over the world? Beekeeper neglect and/or starvation is by far the worst enemy of the bee hive. We operate about 400 hives with bees and additional numbers of nucs all year around. We work the bees and take care of their needs all the time. We have to; the bees provide our income and the income of all the hired help. With all the constant checking, feeding, protecting and caring for the bees, we still lose colonies every month from July through February each year. I expect you lose colonies too—1 or 2 percent a year—so this article is written in hopes you can cut your losses by reminding you of potential problems and suggesting ways of solving them.

When you go into a colony's broodnest, you can expect that out of a hundred visits you will kill one queen. You may not actually kill the queen but you may get the bees in the frame of mind to kill the queen for you by balling her. Most of the time the bees in the queenless colony will be successful in rearing another queen, but not always. If they don't there is a hopelessly queenless colony which will shortly be a useless bunch of drone-laying worker bees. Solution: Check your colonies a minimum of once every six weeks for the presence of a queen and this is determined by the presence of several frames of flat-capped brood and several frames containing cells of pearly white larvae and eggs. Also check to see if there are several frames of honey and if there is honey around the brood.

If the hive contains laying workers, either unite it with another queenright hive or give them a frame of very young larvae and eggs so that they can raise a queen. Give them another



Steve Taber

frame of very young larvae and eggs again in two weeks. At the same time examine the first frame for the presence of emerged queen cells. You can go to all this trouble and usually save the colony, but frankly, in my opinion, most of the time you and the bees are better off by uniting the unit with another colony. Many old bee books and writers of beekeeping literature suggest taking the laying worker colony a hundred yards away and shaking all the bees on the ground. They say that the laying workers will stay there on the ground and you can then safely introduce a queen to the bees that fly back. Remember that old song from "Porgy and Bess": "It Ain't Necessarily So". No study has been made to show that laying workers can't fly or that another group of worker bees wouldn't be laying eggs by sunrise.

When laying workers are in a hive, remember it's not those few bees that are laying eggs that are the problem. The problem is what caused them to be laying workers in the first place—which is a queenless, broodless condition. They don't have any babies to feed, so give them some.

We lose most of our colonies because they are robbed out and the bees starve to death. My bees are always hungry because I live in an area that has few nectar sources and because there is an over abundance of bees, both mine and from other beekeepers. We also put many bee colonies in one apiary, from 60 to over 100, which means there is severe competition among bees for the few flowers available. In such circumstances we have to feed the bees large amounts of sugar so they can survive. To stop robbing, we affix robbing screens to some hives; on others the entrances are drastically reduced. Even so, some sugar syrup is spilled; bees begin robbing and sometimes a colony is robbed out.

A robbed-out colony can be saved if you get there soon enough. What

seems to work most of the time for us is to put the robbed-out colony in an isolated location several hundred yards from any other bee hives and give them a small frame of honey in the center of the broodnest. We close down the entrance to permit passage of no more than two bees at one time. We examine the hive all over for cracks which are to be sealed with duct tape and then hope for the best.

We rarely lose a colony to starvation because we are visiting them so frequently. Beekeepers further north lose colonies because of neglect. There are many starvation conditions that are different and not necessarily easy to determine. In late winter, after severe winter weather, bees will starve with honey in the hive simply because they can't get to it. The honey is too far away from the cluster. You may find the outside of the cluster of bees dead but that there are many live bees inside the cluster. We open the cluster and give them a squirt of sugar syrup. We do that for several days and on the warmest day we move a frame of honey into the center of the cluster, scratch the surface of the honey a bit to expose it under the cappings and close the hive hoping for the best.

Bee colonies seem to starve to death more often in February and March than any other time. If you, or your bee club has a colony of bees on scales, record the weekly weight changes. You should notice that during November, December, January and early February that a large colony will be losing weight at a rate of from two to three pounds per week. But during March and April (depending on your geographical location and how active the bees become during those months) you should notice a drastic increase in honey consumption from the two to three pounds per week to six to eight pounds per week. The reason, of course, is the increasing brood production inside the overwintering bee colony. The adult bees are not only using honey for caloric heat but as food for the young. It's a critical time; the eggs laid during April are the ones that will hatch into bees that will harvest your honey flow during June. If the bees even think that they are going to run out of food, they reduce brood rearing. If they in fact do run short of food, you have lost many pounds of a potential honey crop in June and July.

If you do much reading of the bee literature you will see a phrase frequently mentioned called "stimulative feeding" and that brood production will be increased by the feeding of sugar syrup. Can you really believe that? Can any more babies be produced from humans, animal or insect by feeding nothing but a carbohydrate diet? No! Absurd! Bees are like any other animal; they have to have a balanced diet to produce more babies. Actually what the stimulative feeding is doing is avoiding starvation symptoms in the colony. The honey that is present in the colony is far from the bees, cold and covered with beeswax. It is impossible for the bees to eat. Try pouring a jar of honey when it has been in the refrigerator for several days. Turn yourself into a bee. You leave the nice, warm cluster (not wearing an overcoat or any other protection), find a frame with capped honey, chew through the capping, try to lap up some of that cold, cold, honey and get back to the cluster so that you can share it with your hive mates. Give the bees a quick shot of nice, warm sugar syrup placed right at the top of the cluster, making it easy for them to get.

Then, of course, you wait for the weather to clear later in the season so that the bees can got to the fields and collect nectar, but the weather doesn't clear. It just stays cloudy, cold and rainy. Actually this happens all the time — you KNOW that tomorrow the sun will shine and the bees will pour new nectar in the hive. I can tell you now from more years' experience than I want to tell you about — tomorrow the sun will NOT shine. In fact, the sun will not shine until you have bought the sugar and fed all your bees. Then the sun will shine and the bees will begin to make honey. This all sounds facetious; it is and it's not. If you know from past experience or from conversations with other beekeepers that the honey flow usually starts about the 10th of June and it's now the 12th of June and it's cold and raining, some of your bees will be hungry and will need feed. Go check on them. You may have to do it after a hard day at work in the office or shop, but do it.

The last thing I want to mention which has never been documented but I feel sure is present, is a type of starvation not mentioned in the literature at all. I call it partial starvation that can exist in one part of a hive and not in another. In a large, well-developed colony ready for the honey flow, the honey that is usually available to the bees is only at the top and toward the rear of the cluster. Combs at the bottom and front of the cluster may have no honey in them at all. "Stimulative feeding" at this point will let the bees distribute the syrup into all the combs avoiding partial starvation.

Checking the bees to be sure there is a queen, food and no vandalism. Checking always checking.

Picking up empty equipment because we didn't get to them in time to save the bees. Bees robbed out, neglect, the worst disease.

I am becoming more and more convinced that beekeepers who live where temperatures regularly drop below 15°F should provide the bees a little insulation or protection during the winter months. The insulation will permit the bees to retain more heat in the hive, keeping honey warmer which is far from the cluster so the bees can eat it and bring it back for food and heat. Insulated bee hives permit the bees to utilize the metabolized water as a source of water rather than have this excess moisture be a problem with mold and disease growth during winter and early spring.

Moral of this article: take care of your bees, don't let them starve, treat them as if they were your wayward children who can't take care of themselves. □

Bartering Your Honey

by ROSS W. MURPHY 7100 Monticello Road De Soto, Kansas 66018

An excellent outlet for your honey is to trade it for the goods and services you need. Many people who run small businesses, craftsmen, doctors, dentists, lawyers, yes, even honey producers are using barter as a thrifty way to merchandise their products.

The advantages are many, for both trading parties, but the main one is this: Instead of trading your product for money, and then trading money for the things you need, bartering avoids the money transaction altogether. In times of recession or of tight money, barter is more efficient than trying to work with cash. It would be the most efficient of all mercantile systems, if a way could be found to locate the right trading partner at the right time.

Bartering often is employed in international commerce, since the trading partners — countries — have long been established, and the commodities traded, such as grain, wool, oil, coal, cotton and lumber, are used universally.

Countless companies have found creative ways to move their merchandise. Example: in 1984, the Boeing Commercial Airplane Company wanted to sell ten 747's to Saudi Arabia, which didn't have the cash. However, a Mideast bank came up with the cash after agreeing to accept one billion dollars worth of oil from Saudi Arabia.

On the personal level, avoiding the money transaction leads to new opportunities. Beekeepers may not always have the cash when they want to make a purchase. This fact alone makes it worthwhile to make the effort to find the right trading partners either at the right time or to have them available when the right time occurs.

If you have a surplus of honey, you can expand your clientele beyond your cash-paying customers. It's still business. The advantage is that some of this business may at some point be converted into cash business. Furthermore, referrals, gained through bartering become a marketing tool for cash business. You gain an intangible web of relationships that will bring new and additional business through your door.

Here's a good example: I have my hair cut by a lady named Debbi at Debbi's styling salon. Debbi charges $12 for a haircut with shampoo and styling. Once, several years ago, I realized that I hadn't brought sufficient money to pay for my haircut. "Debbi", I said, "I'd like to work out a better way to pay you. Let me trade some of my fine Kansas honey for haircuts. I don't happen to have any with me right now, but I do need a haircut. You cut my hair now, and before the weekend, I'll bring samples of my honey for you to try. If you don't like it or don't accept enough to equal the cost of the haircut, I'll pay you cash as I have before. Will you give it a try?

Although dubious, she agreed to go ahead. However, when I brought her honey in various sizes to choose from, she selected a gallon for herself and several pints and quarts to present as gifts. The retail value was $30. My haircut had been paid for and I then had a credit of $18 with her. She liked the fact that since no money had changed hands, she did not have to collect sales tax*. Neither did I. She was excited by the idea of trading. "You should send your wife and daughters over so I can style their hair or give them perms," she said. "That way I can get more honey from you sooner."

So now I have a trading partner, and I don't pay for haircuts anymore. I can stop by anytime and let her select one, two or five-pound jars or even gallons for gifts or for her own use to build up credits for hair care. This way I don't have to find a trading partner at the precise time that anyone in my family needs a haircut.

Debbi thinks it's a great idea and has sent me several customers who have continued to buy honey from us.

It's unfortunate, but you are not going to be able to establish a barter arrangement with everyone. The phone company is a good example. I know, I've tried. But once I made a deal with the gas company man who came out to hook up a new line to my honey house. I was only half serious. Of course he didn't trade me for natural gas, but it turned out that he owned a tractor, and I traded him honey for garden plowing and pulling out a row of old fence posts.

Although you can't trade honey with everyone, you can barter with just

***Editor's Note: We suggest you check your state sales tax law to see if barter transactions are exempt from sales tax.**

about anyone. People really like the idea of getting something without spending any hard cash. The year before last I went to the ophthalmologist to have my eyes examined for a new pair of glasses. The complete examination was $37 and the glasses were $103. I got them by bartering and paid no money.

It turned out that all I had to do was ask. Before I sat down for the exam, I decided to swallow my shyness and told the doctor that although I needed glasses, would he please let me trade something of value for them. He asked what I had in mind, and when I told him my proposition, he responded, "Why not? It sounds good to me, and we love honey!"

As we talked more, I couldn't help but get enthusiastic about beekeeping, and he was very interested. He got me to set up a small exhibit in the medical center, along with a stack of my business cards. The exhibit got me an invitation to speak to a senior citizens group for a small fee and while there I sold 22 jars of honey as well. I continually get business from people who pick up my cards at the medical center. Those glasses were not just free, they were profitable!

This is why I say that barter often leads to unsuspected opportunities while at the same time providing additional markets for your products.

Last year we moved our hives by truck and took numerous night photographs of the operaton. When I took the film to be developed, the couple who run the one-hour film store were fascinated by the pictures. A conversation started and finally we decided to trade honey for the film processing. Once again, no cash changed hands.

We participate each year at two "Old Settlers Day" festivals in two of the towns near Kansas City, where we set up a booth and sell our honey. I make it a point to talk to people who visit the booth and are interested in the beekeeping process. In addition to selling them honey, I get their names, addresses and phone numbers plus their occupations. This has been an excellent source of trading partners for me. They know who I am, they have bought my honey, they know its value. When I need a mechanic, a restaurant chicken dinner, or whatver, I have a list to work from.

This article is being written on a word processor by one of my customers. Needless to say I'm not paying cash for the work.

There is no reason you should pay cash for the 500 business cards you have printed. That number of quality cards will ordinarily cost you from $45 to $60. Why not trade honey instead? Just go to the print shop owner with some of your honey and explain what you want to do. Offer fair value in the trade. More than likely the owner has lots of scrap card stock and will figure on getting your honey practically for free. In fact, you will probably be trying to suppress a grin, because you will be getting those cards practically for free. Who's right? Who cares!

And when you ask about letterheads, money won't even be mentioned.

Does it take a lot of nerve? Not really. Nerve is what it takes to work bees, for I think that almost every time I have opened a hive I've been stung at least once. This is easier.

Here's a good technique that I'm using now: I have little placards up on the bulletin boards of most of the grocery stores around. "BEEKEEPER WANTS," they say, "Camping tent, dining fly, portable stove," with my phone number on the bottom. Well, the Murphy's are going canoeing next spring, and we need some new gear. I'm not in a hurry, and when people call, I just love to tell them about the fine strains of honey we produce. Surely someone is going to want to trade, someone who went camping once and didn't like it and really does enjoy good honey.

This is exactly how we got the 35mm camera we took on our last vacation.

Now, if you feel that you don't want to get into this horse-trading operation, there are still several ways for barter to work for you. One way is to join a barter exchange. There are over 300 in operation in this country right now. I noticed that in my town, Kansas City, there are four. You can find them in your Yellow Pages under Barter. They work by getting buyer and seller together, and earn a small commission, usually 8-10% on each transaction in which they are involved.

The Barter exchange will keep a file of local members, what they have to trade, plus their specific wants list. In addition, the exchange will have a computer terminal connected by phone to other barter exchanges for offerings and want lists in other cities.

Usually there is a membership fee, $350 to $400. A portion of this goes for listing you and your wares in the exchange directory, which is re-issued six to twelve times each year. Through this catalog, members can contact you directly for bartering honey, dental work, plumbing, legal services or auto muffler repair.

Suppose an interior decorator wants honey but you don't need any painting or decorating at the moment. After agreeing on a price for your honey, the decorator "pays" you, through the barter exchange, in "trade credits," worth $1 each. You now have these trade credits to spend with any other member of the exchange for repair work, newspaper advertising or restaurant meals.

Let's say that you've listed as one of your "wants" restaurant meals. A restaurant could then contact you directly and either issue you a trade credit draft or give you meals.

With a barter exchange you can also list goods you want that may not be available in your own locale. Since many of the exchanges are national or international, you may be surprised by an inquiry from a distant city with an offer to meet your needs, which you can buy with your locally earned trade credits. You might also get an inquiry from someone who wishes to purchase a large quantity of honey from you, a bakery, say.

A question that arises in many people's minds is just what is the position of the Internal Revenue Service on all this bartering.

In the case of the barter exchanges, a law passed in 1982 legalized these exchanges as "third-party recordkeepers," somewhat like banks or

savings and loans. This means that they must keep track of transactions between members in which they participate and for which they issue and receive credits. The dollar value of these trade credits is reported annually to the IRS and also to each of their customers. This is reported on form 1099B, which you would file with your income tax return.

Although much bartering is transacted without recourse to the IRS, barter goods and services do qualify as income, and therefore are subject to federal income tax. IRS agents are alerted to look for unreported transactions and they routinely tax them when they find them. The IRS simply estimates the fair market value of goods or services and taxes that. Individuals who conduct their barter transactions must agree between themselves just what constitutes fair market value, and therefore must have a good understanding of cost, profit margin and the true stability of the product offered, so they can report this income accurately. When you report your barter activity, you can at the same time deduct the cost of goods "sold" as your business operating expense. The difference between cost and your retail "selling price" is the taxable amount.

I prefer to think that the best method is barter your products at cost, rather than retail, ask your trading partner to do the same, and keep good records to substantiate your cost accounting methods.

But here's a way to put it all in perspective: The usual example the IRS gives out concerns the building contractor who builds a vacation cottage for an automobile dealer in exchange for two sedans. For the life of me, I can't imagine myself playing in that league. Maybe when I have 10,000 colonies.

Now, back to getting connected with a barter group. Says Dean Dowell, the Kansas City operator for ITEX, an international trading exchange; "It's a good idea to get to know the barter exchange before becoming a member. See if they have a limit on how many trade units you can build up. It wouldn't be good to have too many if the exchange goes out of business. Find out if they cancel memberships for people who don't perform well or who sell shoddy merchandise."

Or, you can keep it simple: Over in Shawnee lives a potter who used to sell me stoneware pottery. Beautiful pots! He and his wife used to buy honey from me. Wonderful honey! Today we just trade and if the pots we get from him exceeds the value of the honey he gets from me, he just keeps a tab of the difference, until the day they drive up wanting more honey. If that exceeds his credit, it just goes on my tab. We like to give gifts of honey in pots. If we go over our honey credit, it goes on his tab. It's a simple arrangement, and very good for him. He tells me they only rarely buy sugar anymore.

Every time I make a particularly fair exchange, I can't help but feel that I am ahead in the game. I've found a new market, made new friends for myself and my products and am providing a better living for my family.

The Lasting Influence Of A Man

Apiculture and O.W. Park at Iowa State College

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Forty-one years ago, on a day in July or August, O.W. Park sat at his desk and addressed **this** envelope, to bring a set of reprints to a farm kid in Ohio. Two further comments are prompted by this statement. First, it confirms my wife's opinion, that I never throw anything away, and secondly, like Park, you ought to be helpful to a kid who has made a request of you, because you never know, where that kid will show up again.

Iowa State was an exciting place in apiculture at that particular time. The thought of going to college in Ames, crossed my mind, was visualized a few times, and dismissed, because money was scarce and Ames was too far away. World War II and The G.I. Bill changed all of that.

Apiculture has a long history at Iowa State. It antedates entomology because Mrs. Ellen S. Tupper gave lectures on beekeeping here in 1872. There is no record of how long these were continued, but Ellen Tupper was prominent in beekeeping circles in Iowa and in the nation. She wrote for at least five periodicals, published one called the National Bee Journal in 1873 & 1874, and was an associate editor of the *American Bee Journal* in 1875 (which, by the way, is still published and is in its 120th year). Mrs. Tupper was interested in improving stock by importing the Italian race of bees and, along with another lady, formed the Italian Bee Company for this purpose.

Apparently it was not yet time for an enduring program of apiculture at the college, because it was not until 1914 that C.E. Bartholomew was appointed to carry out beekeeping investigations. A Mr. Atkins succeeded Bartholomew for a short time. Then, O.W. Park succeeded Atkins in 1918 and continued until 1954 with the exception of two short tours of duty elsewhere.

In those early years, another line of apicultural appointments led to the College. Frank C. Pellett who lived from 1879 to 1951 was appointed the first Iowa bee inspector (for bee disease control) in 1912. It was entirely in keeping with Frank Pellett's personality and philosophy when he concluded that education rather than police power was the better approach to the disease problem. Consequently he recommended to the Iowa Legislature that the bee inspection work be placed under the direction of the Iowa State College Extension Service. This was done and F. Eric Millen was appointed in 1917 (Sept. 1, 1917) to the new position with responsibility for inspection, teaching, and extension. Millen resigned in 1919 (June 15) and Floyd B. Paddock was appointed (Sept. 1, 1919) to the position which he held until 1959. At this time, the law was changed to put inspection work under the Iowa Department of Agriculture.

Figure 1. O.W. Park using a refractometer in the field.

Professor Paddock was a 1911 graduate of Colorado A and M at Fort Collins and received a Master's Degree from Ohio State University in 1916. He had been assistant to Wilmon Newell from 1911 to 1915 at Texas A and M when the two of them were investigating the inheritance of body color in the honey bee. From 1915, when Newell left, to 1919, Paddock was chief on the Division of Entomology in the Texas Experiment Station.

1922 was a high point for apiculture at the Iowa College of Agriculture. Sixty-five students were registered in apiculture. The staff was composed of five people. Professor Paddock was in charge. John Jessup was an Instructor in Beekeeping. Wallace Park was in charge of research in beekeeping. R.L. Parker was an Assistant in Research; and Newman Lyle was Assistant Professor in Beekeeping Extension. Jessup, Park, and Parker were awarded advanced degrees under Paddock's direction.

And now we come to the O.W. Park story.

Oscar Wallace Park was born January 14, 1889 near Concordia, Kansas, fifth in a family of six children. His father was a truck farmer, selling produce door to door, and an agent for Watkins Products. As a young man, he lived in Emporia, Kansas, and I recall Dr. Park telling me about the Emporia Gazette and its famous editor William Allen White. Maurine the older Park daughter told me that when she and her sister, Muriel, were 10 or 12 years old, the family visited Concordia and saw the one room school where her father taught just after finishing high school. They also saw the tiny house, then hidden by tall corn, where he was born. He taught later in high school and was a school principal. In 1914, Wallace Park and Beulah Covert of Lyndon, Kansas, were married. She had also been a rural school teacher but was by this time a graduate of the College of Emporia. In 1914, at the age of 25, Wallace Park enrolled as a Freshman at Kansas State. The new Mrs. Park taught German and English at Kansas State which, along with money he had saved, supported the family. The Bachelor of Science degree was granted three years later, in 1917. He remained in Manhattan as an assistant in Zoology for one year studying genetics of grasshoppers under Robert K. Nabours. The help of Wallace Park is acknowledged in one of Nabour's publications. In 1918, he became an assistant in apiculture, at Iowa State, with responsibility for research. He was awarded the Master's Degree in 1920 and the Ph.D. Degree in 1924. His Ph.D. was the first degree at that level conferred by the Department of Zoology and Entomology.

As Dr. Oscar Tauber pointed out, in an obituary statement, years ago, the changes in Dr. Park's professional interests can be seen in his publications, just under 100 in number. From 1919, when his first paper appeared, until about 1923, his papers reflect an interest in bee management and

other practical matters. "From 1923 until 1934, most of his topics centered about the physical characteristics of nectar and honey, and about the physiology of honey production". Publications on disease resistance appeared first in 1936 and interests in breeding and genetics were dominant through the rest of his life.

The fifth paper that Park published was entitled "Breed Better Bees". So, as early as this 1920 paper, he was concerned with breeding, and emphasized selecting non-swarming, gentle bees, resistant to European foulbrood. He did not, as yet, carry out any projects along these lines.

It is of more than passing interest that Park and von Frisch independently and at about the same time, 1923, interpreted the bee dances as a system of communication. Von Frisch published first and Park confirmed his interpretation. Von Frisch credits Park as being **the first** to observe both round and waggle dances by **water collecting** bees. At first von Frisch thought nectar collectors danced round dances whereas, pollen collectors danced waggle dances. Park could see no difference in the dances of bees collecting nectar, pollen, or water and he wrote, "So far as I have discovered, the dance performed by nectar carriers and water carriers is identical, and the only way in which that of a pollen carrier differs from the others is that she does not give her load to the other bees in the hive, but deposits it directly in a cell". Subsequent to these early discoveries, von Frisch continued to work on dancing bees, and Park turned his attention to other things.

The other things at this time were studies on sugar concentration in nectars of a wide variety of plants, ripening of honey, and rate of work by bees. He was apparently the first to use a refractometer in the study of nectars. As shown in Fig. 1. The refractometer could be taken to the field, and nectar analyzed immediately.

September 20, 1934 was a pivotal day in apiculture. On that day, Park and Paddock went to Atlantic, Iowa, to discuss with Frank Pellett, the possibility of investigating, whether or not, there was such a thing as natural resistance, to the bee disease, called American foulbrood. Responsible people believed, that once a colony had American foulbrood, it was doomed. An occasional odd-ball report claimed otherwise. As a result of this conference at Atlantic, a cooperative agreement was arranged among the Iowa Experiment Station, the Extension Service and the *American Bee Journal*. The project got underway in the summer of 1935, with the assembling and testing of 25 colonies, supposedly resistant to foulbrood and six control colonies. From each colony, a piece of comb was cut out and a like-sized piece, containing 75 larvae dead of American foulbrood, was put in its place. Colonies were inspected regularly, for evidence of disease, over the next several weeks. By the end of the summer, the 6 control colonies were heavily diseased, but 7 of the supposedly resistant colonies were free of all symptoms of disease. The conclusion: Resistance to American foulbrood exists.

PROGRESS IN RAISING THE LEVEL OF RESISTANCE TO AMERICAN FOULBROOD BY BREEDING FROM SELECTED STOCK

Year	Number of colonies inoculated	At end of season:	
		Diseased	Not diseased
1935	25	72%	28%
1936	27	67%	33%
1937	114	29%	71%
1938	111	19%	81%
1939	148	8%	92%
1940	89	22%	78%
1941	59	14%	86%
1942	90	27%	73%
1943	89	24%	76%
1944	55	2%	98%
1945	66	2%	98%
1946	101	8%	92%
1947	37	19%	81%
1948	68	29%	71%
1949	62	2%	98%

Figure 2. Progress in selecting for resistance to American foulbrood.

The next question was: Could resistance be transmitted to a new generation? To accomplish more in a year's time, the resistant stock was taken to the Rio Grand Valley of southern Texas. Now, breeding bees presents a problem. Queens and drones mate only while flying so if the queens are to mate with drones of the resistant stock, a mating station, isolated from other bees, must be found since, at that time, artificial insemination of bees was not available. Such a station **was** found in a 25,000 acre citrus orchard. Park and Pellett reared queens and drones, got them mated and sent stock to Iowa for testing in the summer of 1936. Of 27 second-generation colonies, 9 were free of disease at the end of the season. So, resistance was inheritable.

These results created excitement in the apicultural world, and other states as well as the U.S.D.A. came into the work under a new cooperative agreement. The progress made in selecting resistant stock is indicated by the tests made in Iowa from 1935 to 1949, and shown in Fig. 2. Progress was very fast when compared with some selection programs in other animals. Changes of one sort or another account for the drops.

Figure 3. Dr. and Mrs. Park.

The lasting influence of a man is made through several channels. First, of course, is through his personal family. The Parks (Fig. 3) were parents of two daughters. The entire family went to Texas in the winter of 1937 and spent the winter and spring there while Dr. Park was engaged in rearing a new generation of resistant bees.

One of Dr. Park's hobbys was photography and he had a basement dark room at home. The girls sometimes got to "help" in the dark room.

Dr. Park had two or more hives of bees on scales each summer for many, many years. A one-mile trip was made each evening at dusk to weigh the hives, which provided evidence on the magnitude of the nectar flow. Maureen recalls that it was considered a privilege to get to go along, and Muriel has written a poem about weighing the bees which has been published. Muriel recalls typing for her father and hearing him search for just the right word to convey a shade of meaning. In fact, she attributes her own fascination with words and her becoming a professional poet to these early experiences.

Now, in addition to personal family, a scholar in academic life has an academic family. Colleagues working together might be considered one segment of this family. Figure 4 shows Pellett, Park, and Paddock, the three who planned the project on resistance to American foulbrood.

Figure 5 shows Newman Lyle who was on the apiculture staff in 1922; M.G. Dadant, of the *American Bee Journal;* Ed Brown, founder of the Sioux Honey Association; and Park.

Figure 6, taken about 1946 by Colin G. Butler, head of the Bee Department, at Rothamsted Experiment Station in England shows Pellett, Park, and Paddock with Glenn Jones, who lived in Atlantic and was Secretary of the American Beekeeping Federation for several years.

Figure 5. L to R: Dadant, Lyle, Brown, and Park.

In addition to a family of colleagues, in an academic family, a professor is likely to have academic children. Dr. Park had these and their names are listed: Roy A. Grout M.S., 1931, E.M. Braman M.S., 1932, J.F. Reinhardt M.S., 1935, T.W. Millen M.S., 1939, Norval Baker M.S., 1942, M.S. Polhemus M.S., 1950, W. Rothenbuhler M.S., 1952, W. Rothenbuhler Ph.D., 1954.

John Jessup helped me get these names, and we hope, no one has been missed — no one who actually took a degree under Park's major guidance.

The first step, taken by me, toward becoming one of his academic children occurred in September of 1945. I was stationed by the U.S. Army in Clarinda, Iowa and was planning my return to school. I came to Ames to see some faculty members namely Park, Tuber, Lush, and Gowen. I found Dr. Tauber, who called the Insectary for Dr. Park, and then, since it was noon, called his home. After arranging for me to meet Park, Dr. Tauber took me to the student union and instructed me on where to find the cafeteria line. After lunch I met Dr. Park and saw the bee yards and bee lab. It developed over the next few

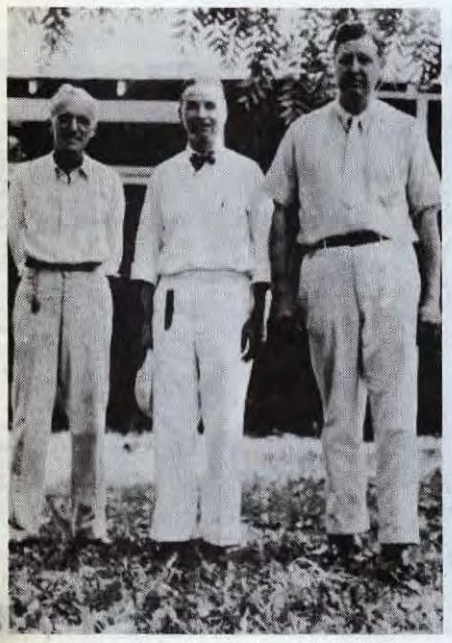

Figure 4. L to R: Pellet, Park, and Paddock.

Figure 6. L to R: Park, Paddock, Jones, and Pellett.

weeks that Dr. Park wanted someone to introduce artificial insemination into his bee breeding program. Since I had been trained previously in this technique, and was impressed with Iowa State, a mutually satisfactory arrangement was inevitable. I arrived at Iowa State on April Fool's Day, 1946 but was not an April Fool for doing so. I could not have had a better place to go to school, nor stronger support from Dr. Park and the Administration during the following years.

Insofar as I have any writing skills, they were acquired as I sat in Insectary Room 117 beside Dr. Park's desk, rather than in English courses. Like Muriel, I also learned something about words. I remember his telling me that, "Quite is quite a word. Look it up". And again, when I was roughly quantifying the different numbers of gynan- quantifying the different numbers of gynandromorphs produced by various colonies. few and several had exactly the same meaning according to the dictionary. On another occasion, when I used the word behavioral, he asked, "are you sure there is such a word?". My reply: "Well I think there so, or there ought to be." As usual, he was right; At that time, there was no such word.

Figure 7 shows Dr. Park and Professor Paddock and some of the students who were registered for either major or minor credit in apiculture about 1950.

The Park's promulgated a custom known as the breakfast picnic. This was such an occasion. It just happened that this was kind of a celebration because approval of a grant application had just been received from Federal Security Agency. So sweating out a grant application is not a new phenomenon.

When one has academic children, in due time, academic grandchildren appear. Depending on the requirements for listing as a grandchild, I know of about 25 to 35. Some of those are listed:

Thompson, Victor c.
L'Arrivee, J.C.M.
Bamrick, John F.
Shimanuki, H.
Borchers, Harold
Mourer, Sharon L.
Wilson, William T.
Rab. Paul A.
Horvath, Roberta
Gfeller, Nancy
Farrell, Keith R.
Drum, Nathan
Eischen, Frank A.
Hachinohe, Yoshio
Trump, Richard
Lewis, L.F.
Rashad, Salah El Din
Hoage, Terrell R.

Roy A. Grout	**M.S. 1931**
E.M. Braman	**M.S. 1932**
J.F. Reinhardt	**M.S. 1935**
T.W. Millen	**M.S. 1939**
Norval Baker	**M.S. 1942**
M.S. Polhemus	**M.S. 1950**
W.C. Rothenbuhler	**M.S. 1952**
W.C. Rothenbuhler	**Ph.D. 1954**

Figure 7. Park' students.

Sutter, Gerald R.
Momot, Jeanette Palmquist
Stewart, Joseph D.
Rinderer, Thomas E.
Waddington, Keith D.
Ting, Jui-I
Collins, Anita
Milne, Charles P.
Grant, Susan L.
Hellmich, Richard
Drescher, Wilhelm
Kulincevic, Jovan
Calderone, Nicholas

Richard Trump presently teaches a highly successful apiculture course at Iowa State and John Jessup, who was once on the faculty, "helps out".

Dr. Park was an avid collector of literature on bees, particularly important bee books of the past. As a material part of the legacy that he left, was this personal library given to the Iowa State University Library. The apicultural holdings of the I.S.U. Library in both books and journals are truly outstanding.

An immaterial part of the legacy is his worldwide reputation as a careful precise investigator. It is almost impossible to overemphasize the esteem with which his work was and is regarded by apiculturist. His work is a model for his academ children and grandchildren to emulate.

Looking at his work from a different angle, is there anything to be gained, any legacy to be identified in 1980, by noting the areas in which he chose to work many years earlier. These areas were bee behavior, resistance to disease, and bee breeding and genetics. It is behavior of bees that makes them useful Since certain patterns of behavior vary widely from colony to colony, a genetics of behavior is accessible, and breeding for improved behavior is possible. To be good honey producers, good pollinators, or useful as a hobby, bees must be healthy. Since natural resistance to disease varies from colony to colony, a genetics of resistance to disease is accessible and breeding for higher resistance is possible. Park's work pioneered in these areas. It remains for us to follow, to reap the great practical and theoretical benefits of bee behavior genetics. It remains for us to reap the benefits of breeding for resistance to various diseases.

And now as a concluding statement, Park's work on certain aspects of bee behavior, on American foulbrood, and on breeding and genetics, identified areas o immediate and continuing importance — even to the present day.

Continued on page 78

Figure 8. About 1950. L to R: Robert Walstrom, Walter Rothenbuhler, Floyd Paddock, Austin Hawes, Martin Polhemus, O.W. Park, G.H. Cale, Jr.

FEED SUPPLEMENT

by GLEN L. STANLEY/State Apiarist Iowa Dept. of Agriculture Wallace Bldg. Des Moines, IA 50319

Back in the early days of our beekeeping (1930's) we learned that there was no better food for bees than honey and natural pollen. Our grandfather and father were cautious about feeding honey from one colony to another, making sure the honey used was from disease free colonies. As we progressed in our beekeeping venture and eventually operated 1300 colonies during the golden years of our beekeeping (1930's) we toyed with feeding colonies sugar syrup. Sugar syrup is far from an ideal food as far as colony development is concerned. Father would cringe every time we thought of feeding honey to other colonies. To feed honey from an unknown source was a no no, and that holds true in our practice today. As proof of what can be accomplished by the different foods fed to bees is the fact that Iowa's most successful (package operated) beekeeping enterprise was made successful by good care and feeding the newly installed bees honey. To help the bees in this effort, they had combs of honey as well as being fed liquid honey which always stimulates and assists bees in brood rearing. This can be accomplished any time anyone wishes more bees and faster developing colonies. Have we moved away from the common sense approach of beekeeping and contrived a plan where we take the natural food from the bees and feed them substitute food in hopes that they may survive all the difficulties this may bring about for the bees?

To date we have not seen any figures that show this practice is economically sound. In fact, the exact opposite seems to be the case in colonies of bees that have been fed substitutes over a period of years.

There is evidence that honey contains a substance known as terpens which we believe assists bees in fighting off many of the known bee diseases. There is an added advantage to leaving the bees enough honey for their very existence which also eliminates the need for extracting honey from brood combs which are dark and should never have honey extracted from them in the first place.

For just a moment let's consider the economics of feeding any, or all, the substitute foods which are available. The first thing to take into consideration is the value of the various foods as far as colonies are concerned. It has been proven time and time again through research that honey is unequaled as far as nutritional value to bees is concerned. Among these values is the fact that bees raised on honey live from ten days to two weeks longer than those raised on food substitutes.

Considering the fact that during the summer months worker bees live only six weeks then those extra days can be the difference between a good surplus crop and a poor one. The next thing to consider might be the cost involved. Bees make honey and store it for their own use at no cost to the beekeeper and without using energy the beekeeper needs while attending to his bees. Most colonies will prepare themselves for the days, weeks and months when there will be no outside source of nectar or pollen available. Feeding substitute foods to bees requires considerable expense and endless days of work. First the bees are robbed of their stores in the brood area, the honey is extracted; all this is at cost to the beekeeper. Next, the substitute must be purchased, hauled in and finally prepared for the colonies and then comes travel to locations to distribute food. Normally the distribution of this food requires two or more trips to insure each colony of an adequate supply until such time as natural sources of nectar and pollen and again available to the bees.

A considerable amount of research as well as some tried and true experiments have shown that colonies of bees winter well if provided an adequate amount of heavy sugar syrup prior to the beginning of winter. They also winter well on good quality light honey which has less indigestibles as far as bees are concerned. The question is, "Can the beekeeper afford to take away all that good quality honey and replace it with a sufficient amount of sugar syrup?" The extra work and the extra containers needed for the honey plus containers for mixing and feeding sugar syrup leaves this in doubt. Isomerose has a number of ingredients that are not desirable for bees. Generally, colonies are maintained when fed Isomerose but seldom do we see extremely good colonies developed when fed some of these substitutes.

Glen L. Stanley

Let us again take a look at some figures as compiled by L.E. Dills of Iowa State College in 1924. His article, "Fall Feeding" appeared in the Report of the State Apiarist that year. This gives a clear picture of what happens when bees are forced to move food or transform sugar syrup to invert sugars.

Today, with profit at a bare minimum, can we afford the losses that are connected with feeding colonies of bees substitute food? Even a small amount of supplemental feeding may not pay well. Nothing can take the place of good combs of honey.

Having accomplished all this and having kept close records of all that has been involved and considering you, as beekeepers, have given yourself even the minimum wage you will wonder why you went to all this trouble.

Our aim is to produce, promote, and sell honey. To do this we have to compete with sugar. Most of us feel there is no comparison but trying to tell the general public is another story. Even though this is true, the beekeepers of this country are the sugar industry's best customers.

The Influence of a Man
Continued from page 76

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Group 1 was fed honey
Group 2 honey one part, water one part
Group 3 sugar forty parts and water sixty parts
Group 4 sugar sixty parts and water forty parts

The following table shows how much was stored and what percent w... lost:

	Percent of feed stored	Percent stored expressed as Honey & Sugar	Percent lost
Honey	74	74	26
Honey & Water	26	52	48
Thin sugar syrup	24	48	52
Thick sugar syrup	62	71	29

Honey Identification

by DEWEY M. CARON University of Delaware

How many different honeys can you recognize? Are you able to identify honey from several different floral sources using taste, smell and color clues? How experienced are you at recognizing honey from eastern U.S.? At the 1986 EAS meeting you will have an opportunity to test your ability and swap your honey for others.

We will begin this year to have an EAS Honey Tasting Contest. The honey tasting contest will consist of 10 different numbered squeeze bottles. Each will contain honey from a different floral source that will be listed on a master list. You need to match the honey sample using taste, aroma, and color clues with one of the honey sources on the list.

Can you describe the taste and aroma of your honey or honey from your state or region? Our language lacks unique words to convey an accurate sensation of taste. A few years ago Arthur Strang and I attempted to begin a description of some of the mid-Atlantic region honey sources. Here are 10 honey sources for you to ponder and perhaps confirm for yourself:

Water White Alfalfa Blossom Honey	Very sweet, smooth, faintly fruity flavor with a pleasing sugary bouquet.
Basswood Honey	Sweet, slightly astringent flavor with a pleasing blossomy flavor.
Amber Blackberry Blossom Honey	Sweet, smooth, rich, roasted nut-like flavor with pleasing fruity bouquet.
Dark Buckwheat Honey	Sweet, smooth, nut-like flavor with a satisfactory fruity, nutty bouquet.
Extra Light Amber Sweet Clover	Very sweet, smooth, taint of cinnamon-like flavor with a pleasing sugary bouquet.
Extra Light Amber Lima Bean Honey	Moderately sweet, slightly tart flavor with satisfactory weak blossom bouquet.
Extra Light Amber Locust Blossom Honey	Very sweet, smooth, slightly fruity flavor with pleasing faint locust blossom bouquet.
Light Amber Mustard Honey	Not sweet, bitter astringent flavor with unpleasant musty bouquet.
Extra Light Amber Orange Blossom Honey	Very sweet, smooth, citric flavor with pleasing orange bouquet.
Dark Red Tulip Tree Honey	Sweet, smooth, carmel molasses flavor with pleasing fruity bouquet.

Competitors sampling honey in numbered squeeze bottles in recent Maryland Honey Tasting Contest. EAS will feature a honey tasting contest Aug. 6-9, at the University of Delaware.

Several of these floral sources are sure to be included in the EAS contest. Recognizing the floral source takes practice; most of us have the interest and the capability to distinguish between the different sources. With sufficient interest honey tasting will become an annual EAS event.

Many beekeepers are interested in trying honey from different floral sources and will gladly trade some of their own for a different honey. At EAS '86 we will have a "swap-stop". Bring one or more of your jars of honey with your label and swap them with other beekeepers for some of their finest honey. We will have a time and place designated for the exchange. It would be a great way to learn to recognize new floral sources within your region.

Interested in competing at EAS '86? The meeting will be Aug. 6-9, 1986 at the University of Delaware, Clayton Hall, Newark Delaware. If you want addtional information on EAS write or call me at Department of Entomology, University of Delaware, Newark, DE 19711-1303. Tel. 302-451-2526.

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TAPE 2 — Spring Management I ($59.95*)
Program 3 — Making Increase in Outyards
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#101 -The Bee Tree: Natural Home of Bees	20	$18
#102 -The Africanized Bee Situation	30	$27

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WRITE FOR 1986 CATALOG

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Siftings

by CHARLES MRAZ
Box 127
Middlebury, VT 05753

One of the nice things about writing these Siftings articles in *Gleanings* is that I do get a lot of feedback from them. Some letters are critical, that I don't know what I am talking about, and others are quite the opposite, they thank me for all the help my suggestions have given them as a result of my 50 years of experience in Apiotherapy.

One recent letter is from a Lady that raises Angora Goats. In it she described the wonderful results she had dressing a serious wound on the abdomen of a goat about to give birth. The front part of her udder was torn and the skin in shreds so that it was impossible for the vet to do much with it. In desperation, she remembered she had a pan of honey mixed with cappings that she neglected to clean up last fall, and applied this honey, cappings and all to the wound, with a large bandage, twice a day. She said in 10 days when the kid was born, it was able to nurse with no problem at all, the wound was practically all healed.

That wasn't all her problems. She said she has a buck goat she wants to breed, but because of Arthritis and other problems, it cannot breed, even though it is only six years old. She inquired if anything could be done to help the goat perform his duties as a buck goat should for his harem. Since I have had some experience along these lines in other animals (and humans?), I suggested to her it was worth a trial and I would be glad to help her.

One of the problems with Bee Venom Therapy is that we need publicity, and it occurred to me, this crippled goat would be a good subject for a video program. If we could get a picture of him on video, crippled and of no use to his harem, before we try Bee Venom Therapy, and then after treatment, it should make an impressive documentary if the goat recovers. I haven't seen the goat yet, but from what I gathered on the phone, it did sound like typical arthritis of the back and hind quarters. Dairy bulls have a similar problem that makes it impossible to breed or to produce semen for artificial insemination. It should make an interesting experiment, especially if we can document it successfully on video tape. It could lead to problems, as there no doubt are some two legged "goats" with similar problems that might get some funny ideas. That we want to avoid at all costs.

Another interesting letter comes from a Doctor in Colombia in South America. I was in Colombia working with beekeepers some 10 years ago and apparently this doctor became interested in BV Therapy for treating rheumatic diseases. He and several doctors have started treating arthritics with Bee Venom Therapy, and as he said, "With wonderful results", and with an article in one of the National magazines. Now he said many people are becoming interested in the treatment.

In the meantime, as we know only too well, there are doctors opposed to the treatment, usually those with no experience. I know only to well, the great problem with Bee Venom Therapy, even though it is the only treatment with any curative value and with no adverse side effects of any kinds, is that there is no money in it; and it is not an easy treatment to both give and take; it is not as easy and convenient as popping pain pills.

The North American Apiotherapy Society held its annual meeting last November at a Baltimore-Washington Airport Hotel. Since we had no meeting in 1984, we wondered if we would have any interest. I am glad to say, there was much interest and a good turn out of interested people, dedicated to Bee Venom Therapy. Thanks to Ann Harman and Maj. Jurgen von Bredow, who make the preparations for the meeting. Proceedings from this meeting and from past meetings can be bought from Ann Harman, North American Apiotherapy Society, 15621 Aitcheson Lane, Laurel, Maryland, 20707. Membership to the society is $10.00 per year. Please become a member to help us out to pay for the costs of printing, correspondence, and to help pay in a small way for all the time and dedication that Ann puts into this work.

This coming, 1986 Eastern States Apicultural Society meeting in Delaware, we hope to have a program on Bee Venom and Apiotherapy. More and more beekeepers are becoming interested and active in this work. One feature I would like to see at such a meeting is to have those using bee venom to tell of their most unusual cases that they have ever treated. Every one that has experience with Bee Venom Therapy all have a favorite case history that is really dramatic. I have seen hundreds of them, but there are always a few that really stand out. It is from hearing about such cases that we can all learn what BV Therapy can really do.

So those of you interested that are going to the EAS meeting next August, write up a short summary of your most interesting case with Bee Venom Therapy and tell us about it. In the meantime, I hope that beekeeping will have better publicity and recognition than it has had in the past several years for 1986. We are the only ones that can do it, no one else will do it for us.

Just as I was ready to mail this letter, I received one from a Doctor of Homeopathy in England, complimenting me on one of my articles in *Gleanings,* praising the virtues of "Natural Medicine". His friend has an

old gray hound, 12 years old, crippled and cannot climb the stairs. The vet didn't seem to help so he put the dog on a homeopathic remedy and a large teaspoon of honey in its milk three times a day. In five days the dog was climbing the stair again! A beekeeper friend of his in his 70's, he says he has the blood pressure of a young man in his 20's. He eats honey every day. If and when the public ever learns the curative value of natural honey and other bee products, never again will there be a surplus of honey.

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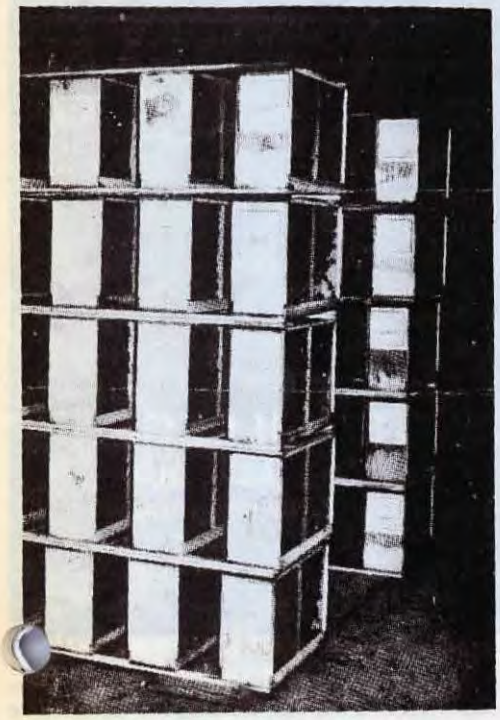

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NEWS and EVENTS

Eastern Apicultural Society Undergraduate Award

The intent and purpose of the Undergraduate Scholarship is to recognize the progency of an apiculturist as a consequential asset to agriculture. Any accomplishment or future endeavors relative to the multifaceted world of Apiculture will be considered (i.e., the use of a product is just as important as the creation of it).

The endowment will be available to full-time undergraduate students of college of agricultural sciences or those students pursuing a degree in a closely allied field (i.e., Biology) within the EAS area. Students pursuing a degree in a more distant major (i.e., Engineering and/or Mechanical student) will be considered if a use for a specific product relative to apiculture is created or student interests can be allied to the field of Apiculture.

An application will consist of: a resume submitted by the student, at least one letter of recommendation from a Professor about the applicant, a certification of the apiculture background of the student and/or his family, and a statement from the applicant about his intended future. Any supporting evidence to tie applicant to the field of apiculture would be welcome.

The acceptance of the scholarship fund will create a non-binding agreement that this student agree to present the results of his/her studies at a future EAS Conference.

The student must maintain a 3.0 Grade Point Average in order to qualify. Financial need of the student will not be a consideration.

Nominations and supporting information should be submitted to'

The Hambleton Award Committee
c/o Elton Herbert
Bioenvironmental Bee Laboratory
ARC — East Bldg. 476
Beltsville Research Center
Beltsville, MD 20705

Breaking with Farm Chemicals In Ohio

The Ohio Ecological Food and Farm Association will hold a conference, "Breaking the Chemical Connection", on March 1 and 2 at the St. Stephen's Community Center in Columbus, Ohio. Among the featured speakers will be Iowa eco-farmers Dick and Sharon Thompson; crop consultant and Acres, U.S.A. columnist, Don Schriefer; and president of the Organic Foods Production Association of North America, Tom Harding. Workshops will be offered on a number of topics.

For information contact:

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559 W. Main Street
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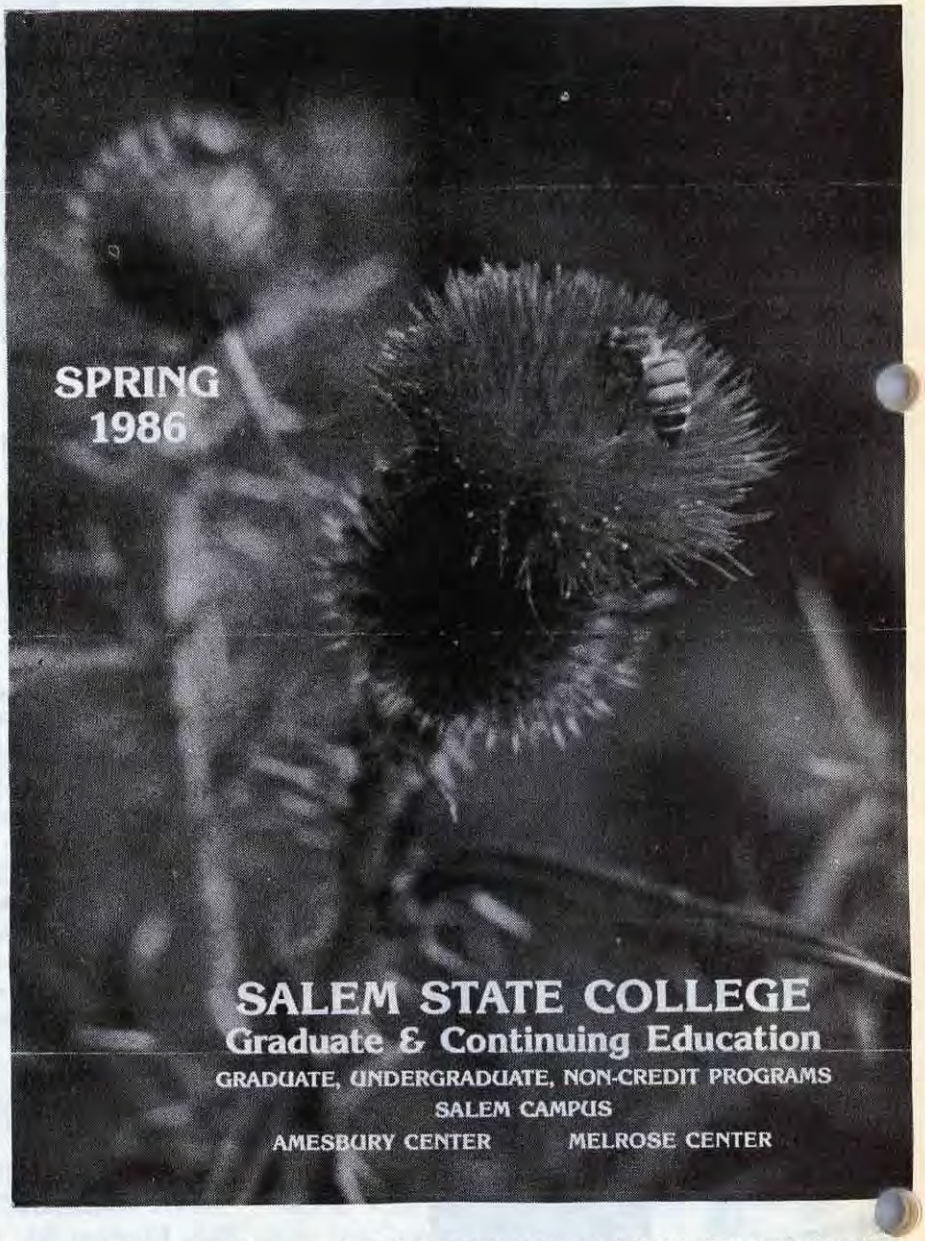


G.O. Rigby Sr. sent in this cover of the Salem State College of Main spring curriculum directory for continuing education with a beautiful color picture of a honeybee on a thistle blossom. The picture was taken by Harold Bantly.

, John W. Shannon, Assistant Secretary of the Army for Installation and Logistics, presented the award saying, "Hanne is the type of American we are proud to support and recognize."

Brantner plans to continue shooting competitively and after graduation, hopes to attend West Point Academy where she wants to be a member of their rifle team. She is one of 19 women who have received the Distinguished Rifleman Badge since the creation of the award in 1926.

Lecture Demonstrations in Beekeeping Offered

The San Francisco Community College District will sponsor a series of six lecture-demonstrations in practical beekeeping for city hobbyists. It will begin on Tuesday, February 11th at 7:00 p.m. at the Marina Middle School, 3500 Fillmore St., San Francisco.

Opportunity to observe correct methods of handling bees will be provided for those who have participated in the series and are prepared.

There will be no course fee, but participants will be expected to subscribe to one of the bee journals and to purchase a reference book from those which will be on display at the first meeting.

Since some people reading this notice for last year's class purchased books in advance to prepare themselves, we suggest Ormond and Harry Aebi, *The Art and Adventure of Beekeeping,* as an appropriate background for hobby beekeeping in the north-central California coast. A reference work such as *The ABC and XYZ of Beekeeping,* Root; or *The Hive and the Honeybee,* Dadant, is recommended, but can be purchased, as above, after inspection.

Instructors will be Leonore Bravo and Louis Dubay. For more information call 415-861-5636.

Beekeeping Program ANR Week

M.S.U. East Lansing, Mich.
March 18-19, 1986

Tues., Mar. 18 — Kellog Center

10:00 a.m. **Visit and get acquainted.**
10:00 a.m. **Movie: Bee Management Fall & Winter, Late Winter, Early Spring.**
10:30 a.m. **Beekeeping Management for Cost Saving, Dr. Roger Hoopingarner, Dept. of Entomology, MSU, East Lansing, Mich.**
11:15 a.m. **Fixed-Land Honey Production, Dr. George Ayers, Dept. of Entomology, MSU**
12:00 Noon **Luncheon, Michigan Beekeeper's Association Introduction of Honey Queen Candidates**
2:00 p.m. **The Mechanics and Economics of Moving Bees for Pollination, Dr. James Tew, Agricultural Technical Institute, Coop. Exten. Serv. Ohio State Univ., Wooster, Ohio**
2:45 p.m. **Break**
3:00 p.m. **Cost Control and Income Tax Tips, Dr. Myron Kelsey, Dept. of Agricultural Economics, MSU, East Lansing, Mich.**
4:00 p.m. **Questions and Answers**

Evening Program — Kellog Center Auditorium

7:30 p.m. **— Honey Queen Pageant.**
— Beekeeping Gadgets and Tools, Dr. George Ayers, Moderator, Dept. of Entomology, MSU
— Beekeeper-of-the-Year Award, Richard Hubbard, Hubbard Apiaries, Onsted, Michigan.
— Reception Following

Wednesday, March 20 — Kellog Center Auditorium

9:30 a.m. **Visit and Get Acquainted**
10:00 a.m. **Movie: Bee Management: Honey Handling**
10:30 a.m. **American Foulbrood Disease: How to Control its Spread, Dr. Roger Hoopingarner, MSU**
11:15 a.m. **Bee Communication, John Root, President, A.I. Root Company, Medina, Ohio**
12:00 **Lunch on your own**
1:30 p.m. **Swarming: The Problem and Its Prevention, Dr. James Tew, Agricultural Technical Institute, Coop. Extension. Serv. Ohio State University, Wooster, Ohio**
2:15 p.m. **Break**
3:00 p.m. **Apimondia Beekeeping Congress, Japan, Jerry Hayes, Dadant & Sons, Hamilton, Illinois**
3:45 p.m. *Anise hyssop:* **Grower Update on Planting and Bee Visits**
4:00 p.m. **Questions and Answers**

Lending Library For Bee Information

The American Apicultural Lending Library is seeking donations of beekeeping books, magazines and items of a historical interest (photographs, equipment, catalogs, labels, stamps, etc.) They are asking your aid in establishing a center where interested parties can obtain otherwise scarce or unavailable information. If you want to help send a letter describing what you would donate to the address below. The Library will provide for shipping and transporation of all materials. A lifetime membership is extended to all donors.

If you wish to utilize the resources of the Library send a stamped, self-addressed envelope. You will receive a catalog of listings and the requirements and procedures involved in borrowing.

The Library is currently expanding its selection of old beekeeping journals and books. If you have these items and wish to share them with others, please contact:

American Apicultural Lending Library, P.O. Box 2292, Santa Cruz, California 95063. Phone (408) 427-2653.

International Beekeeping Seminar VI

Ohio State University's Agricultural Technical Institute announced that in the latter part of July, 1986, it will hold two seminars which it calls a comprehensive and intensive introduction to international beekeeping intended to enable managers and workers to take better advantage of the apiculture potential in designing agricultural assistance programs. The greatest emphasis will be on tropical and subtropical beekeeping.

The first session will be one week long running from July 21st through the 25th and will be on "Basic Beekeeping". The program will be directed by Dr. James E. Tew and the ATI beekeeping staff. There will be a combination of both classroom and apiary work directed toward inexperienced beekeepers covering:

* Bee biology and behavior
* Hive management
* Honey production
* Honey and wax processing
* Crop pollination
* Queen rearing
* Disease and pest control
* Pesticides

The two week session, entitled "Development Beekeeping", running from July 28th through August 1st, will cover a wide range of relevant topics in the field of development apiculture and is intended for experienced beekeepers. The topics will be:

* Tropical and subtropical honey bee management
* Diseases, pests, and predators including predaceous mites
* The Africanized bee in South and Central America
* The hazards of importing and exporting bees
* Pesticide effects
* Finding competent advice and literature
* Organizing co-ops
* Other related topics

Guest speakers will be John Corner of British Columbia, but currently working in Costa Rica and in the past he has had experience in Kenya and Uganda, and Dr. H. Shimanuki, acting chief of the Beltsville, Maryland USDA beneficial insect laboratory.

Simultaneous translation in Spanish and French will be available.

Tuition for the one week session is $1,000. The two-week program is $1,900, but if you register before June 1, 1986, there is a $200.00 discount. July [illegible] is the final deadline for reservations.

To register or get more information, write Dr. Clyde Opliger, Agricultural Technical Institute, Wooster, Ohio 44691, or call (216) 264-3911.

1986 Beemasters Short Course — February 17-22

Sponsored by: *The Apiculture Program, B.C. Ministry of Agriculture & Food Continuing Studies, Simon Fraser University, Barnaby, B.C., Canada, V5a 1S6*

Special Guest Lecture: *Dr. Mike Burgett, Oregon State University; Don Dixon, Apiculturist, Manitoba Dept. of Agriculture; Dr. Cam Jay, University of Manitoba.*

The Beemasters course is an advanced level course. Participants will be expected to have kept bees and have a middle level of knowledge about bees and beekeeping. **Participants is limited to 50.**

Fee: Total registration fee is $125.00. A deposit of $25.00 will hold the registration until **February 1, 1986** when the remainder ($100.00) is due. A $15.00 administrative charge will be deducted from any refunds processed after February 1, 1986.

Examination: There will be a written examination on Saturday morning. Persons who are successful in the examination will be presented with a Beemasters' Certificate at a later date.

Location: On the Simon Fraser University Campus. As the course draws near registrants will be provided with final detailed information on the exact location a campus map and parking information.

For more details write or call Simon Fraser University, Office of Continuing Studies. be obtained on request from: Margot Coard, Coordinator, Office of Conference Support Services, Simon Fraser University, BURNABY, B.C., CANADA V5A 1S6, Ph: (604) 291-3649.

Delaware Valley College Beekeeping Short Course

Spring: Saturday, April 5, 12, 19, 1986

Summer: Friday, Saturday and Sunday, June 27, 28 and 29, 1986

Delaware Valley College, Doylestown, PA will again be offering its Spring and Summer Beekeeping Short Courses. The courses are offered under the direction of Dr. Robert Berthold (Associate Professor Biology) in co-operation with Mr. Jack Matthenius, (New Jersey Supervisor of Bee Culture), and Mr. Frank Makowski (New Jersey bee supply dealer). The program will include a special talk by Mrs. Marnie Berthold on home uses of honey. Instruction will take place on the Delaware Valley campus, with the College apiary and Honey House being utilized.

Over 90 persons attended the 1985 courses. Included in this group were experienced beekeepers, novices, and those considering taking up beekeeping as a hobby. There were quite a few teachers who were planning to use the information presented in their own classroom situation. Also a number of people incorporated the course into their vacations.

The total cost for the three days of instruction is $30.00; you are urged to register early so that we know how many to plan for. However, it is permissible to register on the first day of the course with no penalty. Further information may be obtained by writing to Dr. Berthold, Delaware Valley College, Doylestown, PA 18901, or by calling him at (215) 345-1500.

Internal Mites Found In California

Just having recovered from the Africanized bee scare, California has now found internal mites in three different locations. Eight-hundred fifty colonies have already been destroyed (or de-populated), if you prefer, with about another 3,000 scheduled to be killed.

This puts the California bee breeders in the same situation as those in the Southeast — in jeapordy of losing their Canadian markets.

We Thought We Had All The Problems

It has been generally conceded that the number one disease problem in Australia is Nosema. Yet the use of fumagillin is fairly rare.

The reason for this is that in Australia fumagillin is a prescription drug and can only be purchased from departmental district veterinary officers after a positive diagnosis has been established that the colony really has Nosema.

Beekeepers actually have to submit bees for diagnosis, apply for permission to import the drug, and arrange for the importation through the Department of Agriculture. When it arrives, often three months later, the veterinary officer will dispense only enough to apply the proper dose to the affected colonies. By this time the damage has already been done, perhaps even to the extent of killing the colony.

With Nosema having the potential of reducing crop yields 30% or more, we are fortunate that fumagillin is so readily available.

Beekeeper Found Guilty Of Equipment Theft

The Linton, North Dakota Emmons County Record on November 13th reported that a six person jury in Emmons County Court ruled tht Joaquin Llerenas of Hazelton, North Dakota, guilty of theft of beekeeping equipment. The case was brought against Llerenas by Julio P. Diaz, representing the firm of A.H. Meyer & Sons, Inc. The case charged that Llerenas stole property on about September 17, 1985, alleging that he retained 22 bee crates, 4 wire spacers and other equipment all of which was mixed in with beehives belonging to A.H. Meyer & Sons, Inc.

Llerenas plead not guilty to the charges. The trial was held on November 7th and after a lengthy deliberation, which went until 1:30 a.m. on November 8th, the jury found Llerenas guilty as charged; however he was found not guilty on a second charge brought by David Sundberg alleging a similar theft of equipment.

Llerenas had been employed by the Meyer firm about seven years but then parted with them to establish his own business.

Tri-County Beekeeper's Association Holds Spring Workshop In Ohio

The Tri-County Beekeeper's Association will hold their 7th Annual Spring Workshop on March 8, 1986, at the Student Activities Center and Bee Lab of The Ohio State University/Agricultural Technical Institute, Wooster, Ohio. Registration for the Workshop will begin at 8:00 a.m.

The Key Note speakers will be Richard Taylor from Trumansburg, New York and Hank Thoenes, a Peach Corp Representative and beekeeper from Detroit, Michigan. The Workshop schedule will include one key note address and two mini-sessions in the morning, a break for lunch, one key note address and one mini-session in the afternoon followed by awarding of door prizes, raffle and our annual scholarship. Some of the mini-session topics will be "Beekeeping Around the World", "An Africanized Honey Bee Update", "Making Mead", "Marketing", "Basic Beekeeping", "Cooking With Honey", and "Beekeeping Equipment".

Registration will be $5 at the door and $4 for pre-registration. Lunch will be available. We expect to have representatives from all of the major supply companies and Mr. Taylor will be available to sign his books.

For more information call Phil Mariola at 216-264-3911, ext. 328, or Mark Headings at 216-263-1794. Please mail yoru pre-registration to Mark Berninghauses, Sec./Treas., Tri-County Beekeeper's Association, 3372 East Moreland Rd., Fredericksburg, Ohio 44627. Make checks payable to Tri-County Beekeeper's Association.

February Beekeeping Class

In a slump? Need a new idea? Wanta bone-up an old one? Or meet some other beekeepers to trade swarm stories with? Or find a novice to coach?

Come to the Coast. Attend class on Saturday and play on the beach Sunday. Join the fun Winter Term '86 at Southwestern Oregon Community College or Florence's Lane Community College when Joann Olstrom will again be teaching BEES, BEEKEEPING AND HONEY. Out-of-district students are most welcome.

Handouts, audio-visuals and demonstrations are designed for both the beginner and the intermediate beekeeper. The class is open to 4-H'rs, senior citizens and those in between! No bees are required so non-beekeepers are also welcome.

SWOCC class ($9.50) begins on Feb. 6, at SWOCC campus, 7-9:30 p.m. LCC ($13.50) 7-9:30 p.m. is Feb. 4. Both classes will meet at Reedsport High for Sat. Feb. 22, 9-5. A half day hive opening, honeyhouse visit and hive assembly will be arranged, probably in mid-March at Reedsport.

Those able to attend only the Feb. 22 session will be given handouts missed on the 4th or 6th. However, pre-registration is a must so that adequate numbers of handouts may be prepared.

For further information contact SWOCC, Coos Bay, OR 97420, or LCC, Siuslaw Center, 31st and Oak, Florence 97439.

Beekeeping Newsletter Available From New Mexico State University

Dr. Elbert R. Jaycox of New Mexico State University is editing a quarterly beekeeping publication, *The Newsletter on Beekeeping,* which is available by subscription for 1986. The newsletter is four pages of information and ideas for beekeepers at all levels of ex-

perience. In includes management tips, new research information, and evaluation of equipment and techniques, to name a few.

Jaycox is the author of the books *Beekeeping Tips and Topics* and *Beekeeping in the Midwest.* He has been editing *The Newsletter on Beekeeping* since 1984. Before moving to New Mexico, Jaycox was beekeeping specialist at the University of Illinois, where he also edited a popular newsletter.

The Newsletter on Beekeeping is mailed in March, June, September, and December. The annual subscription fee is $2.50 in the United States and US $3.50 elsewhere. Subscriptions are for a calendar year. Latecomers will receive the back issues for the year.

You may receive tne newsletter by sending the subscription fee to the following address:

Beekeeping Newsletter
Agricultural Information
Box 3AI, NMSU
Las Cruces, NM 88003 USA

Make checks and money orders payable to New Mexico State University.

Africanized Bee Project Ends Successfully

The Africanized Bee Project headquartered in Bakersfield, California closed down December 2 after sampling and testing over 22,000 commercial and wild bee colonies. The experts declared that the introduction of Africanized bees has been neutralized by genetic mixing with native European bees and by elimination of 12 colonies found to have a high probability for Africanization.

The 12th find was confirmed and destroyed November 8 in a managed apiary retested one mile east of the 10th find.

Testing of apiaries in and around the quarantine area was completed November 20th making all apiaries eligible for release. The State quarantine was lifted December 2nd. Procedures to lift the federal quarantine are underway and should be complete in January, 1986. The federal restrictions still in place will not affect the intrastate movement of bees, but will require that beekeepers moving bees from the quarantine zone to other states obtain a federal certificate.

The Winning Team

Many people contributed to the success of the Africanized Bee Project. Various counties loaned their apiary biologists to help sample apiaries. A number of county, state and federal personnel served in rotational assignments. The project employed many seasonal employees who worked hard with the cadre of county, state and federal professionals were recognized as having served more than 30 days on the Africanized Bee Project.

Agricultural Commissioner	Bob Edwards (Kern Co)
Project Leader	Len Foote (CDFA)
Deputy Project Leader	Reg Rosander (USDA)
Survey Operations Leader	Pat Paswater (CDFA)
Structural Survey Leader	Ray Bingham (CDFA)
Trap Hive Leaders	Art Gilbert (CDF[illegible] Jim Rudi[illegible]
Apiary Sampling Leader	Jack Marks (Kern Co)
Feral Sampling Leader	Jim Brackeen (Kern Co)
Sample Security	Susan Johnson (Kern Co)
Depopulation Treatment Specialist	Clarence Mayott (CDFA)
Quarantine Enforcement	Chuck Bennett (Kern Co) Bill Downer (CDFA) Abel Valenzuela (CDFA) Roger Spencer (CDFA) Derek Yamamoto (USDA) Wendel Wong (USDA) Sherwood Gibbs (USDA)
Lab Testing Leader	Dennis Hannapel (USDA)
Lab Senior Scientists	Dr. Marius Wasbauer (CDFA) Dr. Fred Andrews (CDFA) Dr. Alan Hardy (CDFA)
Lab Technical Support	Dr. Alan Sylvester (USDA) Lorraine Davis (USDA) Dan Winfrey (USDA) Dr. Tom Eichlin (CDFA) Patty Adams (CDFA) Sandy Shanks (CDFA)
Public Affairs Officers	Gera Curry (CDFA) Wayne Baggett (USDA) Marlene Stinson (USDA)
Special Assistants	George Buxton (CDFA) Dr. George Loughner (CDFA)
Scientific Advisory Panel	Dr. Norman Gary (UCD) Dr. Tom Rindnerer (USDA) Dr. Orley Taylor (UKansas) Dr. Howell Daly (UCB) Dr. Eric Mussen (UCExt) Steve Park (Bee Breeder)
Mite Testing	Dr. H. Simanuki (USDA Tok Kono (CDFA)

Africanized Bee Projects — 1985 Statistical Data Sheet

SURVEY (1088 Sq. Miles)	TOTALS
1. Residents Surveyed by Crews	6,396
Ferals Collected	53
Residents Surveyed by Circular	35,000
2. Public Call-Ins	745
Calls Meeting Response Criteria	538
Ferals Collected	468
3. Trap Hives Deployed	741
Servicings	4,173
Swarms Trapped	3
4. Kelso Valley	
Composite Samples	6[illegible]
Individual Bees Tested	484
Ferals Located	12

Sampling (22,289 Colonies)	Apiaries	Colonies
1. Managed Colonies	246	21,821
Quarantine Areas	126	11,594
Extended Surveyed Areas	39	3,650
Exposure Sites	46	2,764
Resamples	40	3,813
2. Ferals		468
Quarantine Area		54
Extended Surveyed Areas		36
Exposure Sites		98
Other Areas		270

Testing (22,397 Samples)	Samples
1. Managed Colonies	
Bakersfield Lab — Steps 1 & 2	21,922
Forwarded — Steps 3 & 4	854
2. Ferals	
Bakersfield Lab — Steps 1 & 2	475
Forwarded — Steps 3 & 4	105

Positive For Africanization (12 Colonies)	
Managed Colonies	7
Feral Colonies	5

Regulatory Activities		Apiaries	Colonies
1. Apiaries Under Regulatory Hold		270	21,184
2. Apiaries Inventoried (No Hold)		94	7,478
3. Compliance Agreements Issued	44		
4. Apiary Verification Visits	832		
5. Quarantine Violations	2		
6. Certs of Quarantine Compliance Issued	190		

Peak Project Participation	Permanent	Seasonal	Total
USDA	9.5	23	32.5
CDFA	18.5	21	39.5
County	4	0	4
Totals	36	44	76

AFRICANIZED BEE PROJECT
Chronology Highlights

JUN 6 — Machine operator in oil field near Lost Hills, California saw bees swarm from kit fox den and kill a rabbit.

JUL 23 — Suspect bees determined "Africanized" after repeated tests.

JUL 24 — Africanized Bee (A-Bee) Task Force (specialists from USDA, CDFA, UC, Kern and neighboring counties) assembled in Kern County. Air and ground search for A-bees began.

JUL 25 — Excavation under kit fox den revealed large nest of combs, but bees had absconded. Aerial mapping of 400 square mile area completed.

JUL 29 — Ground crews completed mapping, kick-testing and hold noticing of 9200 managed colonies (97 apiaries) in 400 square mile area.

JUL 30 — A-Bee Scientific Advisory Panel reviewed situation. Confident that A-bees would be diluted by 9200 European colonies. Recommended testing all managed apiaries in 400 square mile area, with destruction of any colony found Africanized, and destruction and testing of feral colonies reported within [illegible] miles of infestation site.

AUG 1 — A 462 square mile area placed under quarantine.

AUG 2 — Sampling and testing of commercial colonies began. Fifty bees from every colony subjected to four-step screening test — Steps I and II at Bakersfield field lab, Step III at UC Berkeley, and Step IV at Baton Rouge Lab. Complex but simpler than 30 hour test previously required. Five hundred bees from each apiary to CDFA lab at Sacramento for mite tests.

Personnel from six counties within 50 mile radius instructed in sampling and destruction of reported wild nests.

AUG 5 — Field lab began testing at Bakersfield.

AUG 7 — A-bees found in managed apiary and destroyed two miles north of original find. A-bees (possibly from fox den) had displaced European colony. Survey area extended two miles north of quarantine area (Q-area). All apiaries within two miles of infestation site held for retesting in six weeks (time required for newly introduced A-swarm to Africanize colony)

AUG 14 — Feral bee nest in hollow tree stump seven miles southwest of original find tested "Africanized" after being destroyed. Survey area extended west and south of Q-area, with two mile retest around infestation site.

AUG 20 — "Tuesday at Ten" news conferences began. (Weekly updates for media on progress of Africanized Bee Project.)

AUG 21 — Fourth find of A-bees confirmed and destroyed in apiary nine miles southwest of Bakersfield. Local beekeeper had captured a swarm in Lost Hills area. Bees reported mean and anxious to swarm. Two mile exposure and retest zones established around apiary site plus water tower where swarm captured. Surveys began in Kelso Valley where A-bees may have swarmed from apiary on summer location.

AUG 29 — Fifth Africanized colony confirmed and destroyed one mile southeast of original find.

AUG 30 — Scientific Advisory Panel noted evidence of genetic dilution. Recommended project continue and Kelso Valley be closed to beekeeping.

AUG 31 — First apiary cleared for release of honeycombs from Q-area.

SEP 6 — Sixth Africanized colony confirmed and destroyed. Swarm had occupied empty hive in commercial apiary four miles east of original find. Apiaries inventoried in four mile corridor east of Q-area in case additional testing needed.

SEP 27 — Seventh A-bee find confirmed in feral nest reported by oil company safety officer, five miles north of Bakersfield. Mixed percentage. Twenty-four other ferals in oil field and Oildale tested European. No expansion of Q-area.

OCT 2 — Eighth Africanized colony confirmed and destroyed in managed apiary, five miles southeast of original find.

OCT 5 — First apiaries eligible for release from Q-area. Must be at least two miles from any infested or untested apiary.

OCT 18 — Beekeeper fined $1,830 for quarantine violation.

NOV 6 — Three genetically diluted A-bee finds confirmed.

Ninth find was a feral, nesting on a tree limb at residence in North Bakersfield. Thirty-two other ferals previously called-in by residents within two miles tested European. News article and circulars to 35,000 residents in two mile radius revealed 36 additional colonies for testing.

Tenth find was in managed apiary in extended survey area just below southeast corner of Q-area. Apiaries in two mile radius tested or retested.

Eleventh find was small swarm, without comb, on water pump discharge pipe five miles east of Q-area. Apiaries in this section tested European.

NOV 8 — Twelfth find confirmed and destroyed, in managed apiary retested one mile east of tenth find.

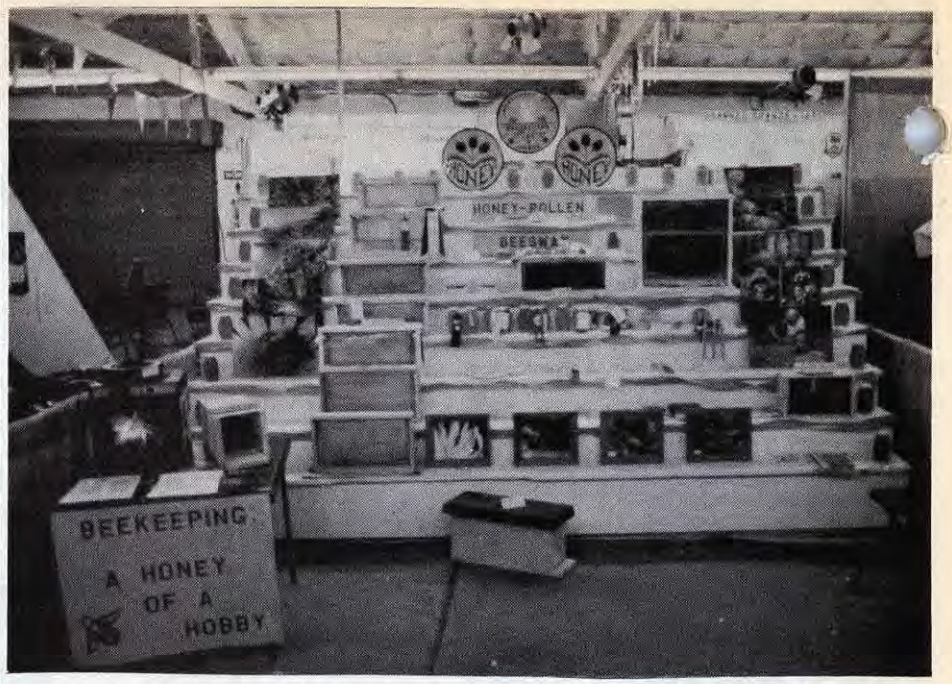
NOV 20 — Q-area testing complete. All remaining apiaries eligible for release.

DEC 2 — State quarantine lifted. Project ends.

County Fair Participation

1985 was the third year that the Northwest Ohio Beekeepers Association manned a booth at the Allen County Fair. The first year was strictly a display booth. However, in 1984 and 1985 we made a contest of the honey wax, observation hives, and honey cookie exhibits. In 1984 there were 24 exhibits from six exhibitors and in 1985 there were 27 exhibits from 10 exhibitors. An increase in both exhibits and exhibitors. One meets many people at a fair booth and it was surprising to find so few people that had any knowledge of bees or honey. Two hundred 2-page sheets of recipes were passed out to those people who asked for them. It was noticed that most were folded and placed in the purse.

A display booth with plenty of copies of recipes using honey as pass outs at the local fair is certainly a good way to promote the use of honey.



The cookie recipes of the three winners and the honorable mention have been typed into a single sheet and will be another pass out at the 1986 fair.

New Organization Formed

Mead — it was the drink of the red-blooded Vikings, the dragon-slaying knights. It has been used to toast villians and kings, sorcerers and plowmen. Drunk from hammered goblets and wooden bowls, Mead has been used in celebration and consolation down through the history of man.

Beekeepers are ever in need of a market for their honey and the development of Mead industry could help answer that need. A national organization based in Ohio has been formed to encourage the production and consumption of Mead.

They plan to publish a quarterly newsletter containing interviews with Mead makers, topics on home wine making, honey information, history and folklore, book reviews, etc. In their second year they hope to organize a Mead festival and competition. Further down the road they will include a speaker's bureau and an on-going Mead research project, probably based at one of the universities.

Pamela J. Spence is director of the American Mead Association. Serving on the board are: Dr. James Tew of the Agricultural, Technical Institute, Dr. James Gallander of the Ohio Agricultural Research and Development Center and Donnie Winchell, Executive Secretary of the Ohio Wine Producers Association.

Dr. James Gallander, Professor of Horticulture and an Entomolologist at OARDC is currently producing Mead in the laboratory and will be presenting his findings at the Ohio Wine Short Course this month. This course is attended by many wine makers and winery owners from the midwest.

The fledgling organizaton has applied for grant money but has been denied funding due to the insufficient basic funding of the program. So the first order of business is to solicit start-up funds which will be used in part to publish the newsletter. Later subscriptions and advertising will sustain the newsletter.

Those interested in contributing money to help develop this market for honey can do so by sending their contributions to: The American Mead Association, 4236 Fry Road, Ostrander, Ohio 43061.

CLASSIFIED CORNER

Classified rates: 49¢ per word, each insertion, payable in cash in advance. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) counts as one word. Not less than 10 words accepted. Copy or cancellation orders MUST be in by the 1st of the month preceding publication. Blind Ads $6.50 additional charge per month. Send classified ads to the A.I. Root Co., Advertising Dept., *Gleanings In Bee Culture,* Box 706, Medina, Ohio 44258-0706.

MAGAZINES

THE AMERICAN BEEKEEPING FEDERATION needs your support! Join in supporting efforts to stop adulteration, to improve marketing conditions and to encourage the continued research on African Bees and Varroa and Acarine Mites. Send for information, membership application and sample copy of bi-monthly News Letter! Write To: THE AMERICAN BEEKEEPING FEDERATION, INC., 13637 N.W. 39th Avenue, Gainesville, FL 32606. TF

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, regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Mail inquiries from USA: H. Kolb, P.O. Box 183., 737 West Main, Edmond, OK 73034, Phone: (405) 314-0984. IBRA PUBLISHES: *Bee World*, a quarterly journal for the progressive beekeeper. *Apicultural Abstracts*, a survey of scientific literature from all languages. *Journal of Apiculture Research*, for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership $1. Specimen copies of *Bee World*: **Journal of Apicultural Research** or *Apicultural Abstracts* from INTERNATIONAL BEE RESEARCH ASSOCIATION, Hill House, Gerrards Cross, Bucks, SL9 ONR, England. TF

DAIRY GOATS—for milk, pleasure and profit. Excellent for children, women and family! Monthly magazine $11.00 per year ($13.50 outside U.S.A.). DAIRY GOAT JOURNAL, Box 1808 T-3, Scottsdale, Arizona 85252. TF

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

SCOTTISH BEE JOURNAL. Packed with practical beekeeping. Sample copy from Robert NH Skilling, FRSA, 34 Rennie St., Kilmarnock, Scotland. Published Monthly. $4.00 per annum. TF

BEE CRAFT — Official (monthly) magazine of the British Beekeepers Association. Contains interesting and informative articles. Annual Subscription $5.10 (Surface mail) and $7.10 (Airmail). 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

POSITIONS WANTED

Available now for migratory or stationary bee work. 32 year old beekeeper with 5 years experience and AAS degree from USU/ATI. New York/New England area preferred. Have home in Upstate New York. Willing to relocate. Write: Mark Berninghausen, 3372 East Moreland Road, Fredericksburg, Ohio 44627. 2/86

HELP WANTED

Man interested in working bees, for the 1986 season. Willing to learn our system. Small commercial outfit. Paul A. Ballard, Roxbury, New York 12474. 2/86

Beekeepers & Helpers wanted for migratory Texas operation. Resume to: 17307 Windypoint Dr., Spring, TX 77379 TF.

ADVERTISING

Make money from small ads like this! Plan (12 pages, 8½ x 11) shows how! **Voice Publications, Box EX65, Goreville, IL 62939.**

BUSINESS OPPORTUNITIES

$1,250 WEEKLY HOME-MAILING PROGRAM! Guaranteed earnings. Start immediately. FREE DETAILS. Rush stamped, self-addressed envelope to: S & B-P, 804 Old Thorsby Road, Clanton, Alabama 35045 TF

Sell Rawleigh — Mr. Groom Products from your home with no overhead. Send $1.00 for literature to start. Rawleigh Products, High St., Erving, Mass. 01344 TF

FOR SALE

"BEEKEEPERS LEARN"
35 years of successful
WINTERING & SUMMER MANAGEMENT
Explained "Step by Step"
Write Box 6696-G — Saginaw, Mich. 48608
TF

INSEMINATION DEVICES. For prices write Otto Mackenson, Box 1557, Buena Vista, CO 81211 TF

For Sale: clean, fresh, dry, Bee Pollen. $6.50/pound. You pay shipping. Honeycomb Apiaries, R.R. 3, Box 74, Wrightstown (Kaukauna), Wi. 54130. Ph. (414) 532-4314.TF

FOR SALE: Bee Operation on 15 acres. 14' x 60' wood frame building on cement. Also 20' x 30' storage shed. Excellent line of equipment plus 500 hives. 25 yard sites available mostly on Sweet Clover. Call 873-5900, Renaud Realty, Box 416, Tisdale, Sask. SOE ITO TF

Complete 700 hive operation in south western Manitoba including buildings, house, trucks and all related equipment. Write to:
Gleanings In Bee Culture
P.O. Box 97
Medina, OH 44256

For Sale — All or part of package bee and queen rearing operaton in South Georgia. Consisting of 8 and 10 frame hives. Queen nucs, buildings, and other necessary equipment. Stover Apiaries, Mayhew, MS. Phone: 601-327-7223. TF

800 Colonies, 10 frame and 8 frame, equipment for 1500-2000 colony operation. Possible to take over existing operation in Michigan's Thumb area. Jelinek Apiaries, Filion, Mich. 48432. Phone 313-987-6593 3/86

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Continued from page 59

Answers To Testing Your Beekeeping Knowledge

1. False. The varroa mite is an extremely serious honeybee parasite that results in high bee mortality. The mite feeds on blood of adult bees, larvae and pupae. At the entrances of the affected colonies, dead or dying newly emerged bees are seen with malformed wings, legs, abdomens and thoraxes. Opinions vary as to the seriousness of the honeybee tracheal mite. Many report that it is similar to a stress disease having the greatest impact during long periods of confinement.

2. True. Only adult female varroa mites can survive outside of brood cells on adult bees. Female mites enter the cells containing young larvae just before they are sealed. They go to the bottom of the cell and emerse themselves in the larval food. After the cell is capped, she starts feeding on the larva and begins laying eggs approximately two days later.

3. True. Varroa mites have a definite preference for drone brood but it is not known why. Possibly it is related to the amount of food required by drone larvae or lower temperatures found in the outer regions of the brood nest.

4. True. African honeybees in the form of queens and semen have been introduced into the United States in the past.

5. False. The Africanized honeybee has moved through South and Central America at a rate of 200-300 miles per year.

6. False. No significant chemical difference between venoms of Africanized and European honeybees are known. The only differences is that Africanized bees are up to 10 times more active in stinging that European bees.

7. True. Africanized honeybees have a greater tendency to swarm than the European honeybee: 3-4 times annually in comparison to 1-2 times.

8. False. Laboratory tests have shown that European honeybees hoard significantly more sugar syrup than Africanized honeybees.

9. True. Africanized honeybees are highly aggressive. They respond to colony disturbances more quickly, in greater numbers and with more stinging than European honeybees.

10. True. In response to adverse conditions, Africanized honeybees frequently abscond and migrate long distances to new nest sites. European colonies rarely abscond.

11. False. The Africanized honeybee is just slightly smaller than the European honeybee. However, only a highly skilled expert using sophisticated techniques (electrophoresis, gas chromatography or morphometric analysis) can tell them apart.

12. True. Africanized worker cells in natural comb are smaller in diameter than the comb cells of European honeybees.

13. True. Development time from egg to adult is shorter for Africanized than European honeybee workers: 18-20 days in comparison to 21.

14. True. African bees in Africa forage at lower temperatures and light intensities, and fly earlier and later in the day than the European honeybee.

15. False. Africanized honeybee workers live 12-18 days compared with 32-35 days for European bees.

16. D) *Apis mellifera scutellata* **formally** *adansonii*

17. A) 9 days of age

18. C) Texas

19. The bee louse is a wingless fly (insect) with 3 pairs of legs and the varroa mite has 4 pairs of legs. Both can be seen with the naked eye.

There were a possible 20 points in the test today. Check the table below to determine how well you did. If you scored less than 12 points, do not be discouraged. Keep reading and studying — you will do better in the future.

Number of Points Correct	
20-18	Excellent
17-15	Good
14-12	Fair

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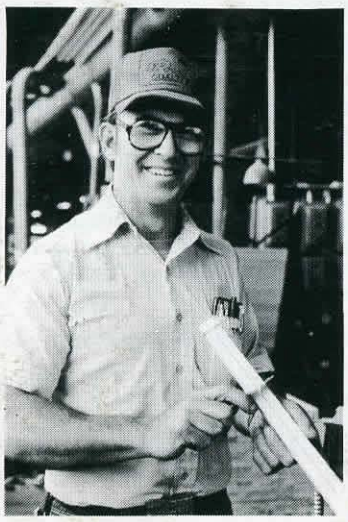

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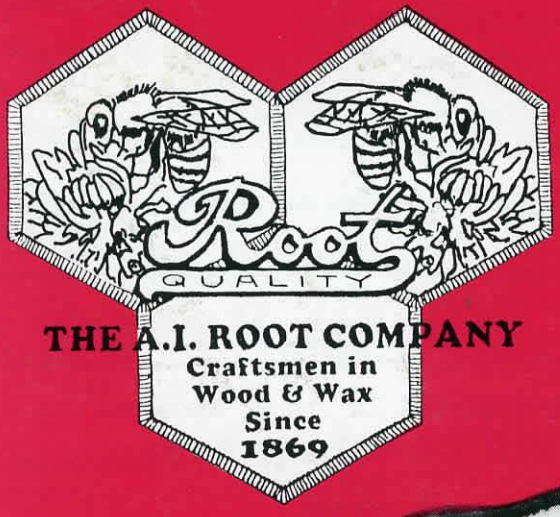

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