GLEANINGS IN BEE CULTURE

FEBRUARY 1984

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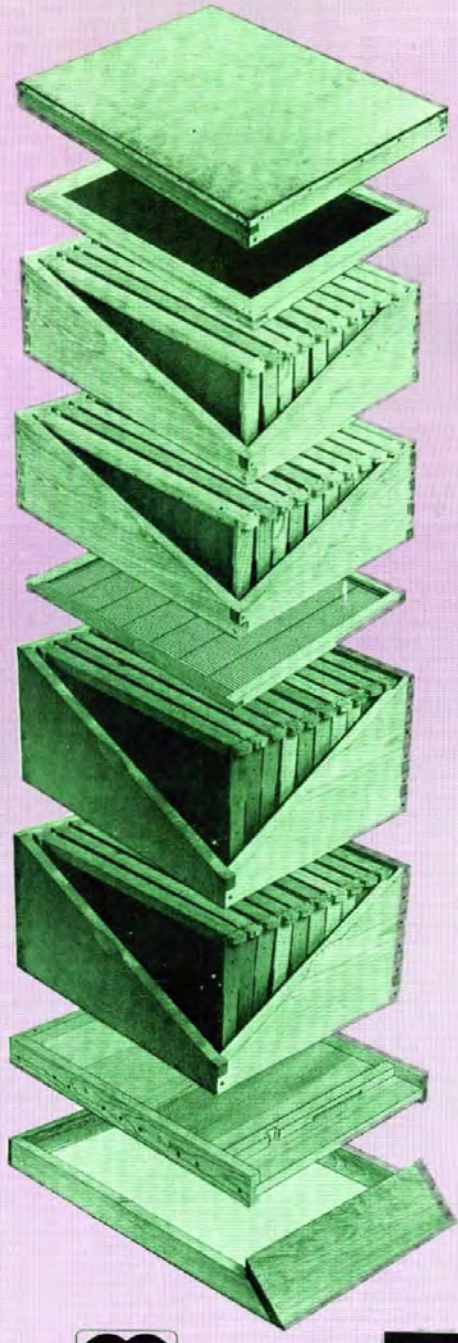

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Subscription Rates; United States subscribers, one year, $10.35; two years, $20,50. Single copy $1.50. Other countries including Canada, Pan American countries and Spain (U.S. Currency only). $3.25 per year additional for postage. Published monthly. Discontinuance: Subscription stopped on expiration. Change of Address: Give your old as well as the new and print the name to which the journal has heretofore been addressed. Remittance should be sent by post office money order, bank draft, express money order or check.

Articles are solicited. Stamps should be enclosed to insure return of manuscript to author if not printed.

Opinions expressed by the writers in these columns are not necessarily the opinions of the editors.

Microfilm copies available at University Microfilms, Inc., 300 North Zeeb Road, Ann Arbor, Michigan 48103.

Advertising rates and conditions will be sent on request.

Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, over the years very few complaints have been received.

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POSTMASTER: Send Form 3579 to
623 West Liberty Street
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Medina, Ohio 44258-0706
Phone: (216) 725-6677

GLEANINGS IN BEE CULTURE

Since 1873

FEBRUARY, 1984 (ISSN 0017-114X) Vol. 1V, No.1

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COVER STORY

Ray Barth, Monroe, Wisconsin, looking over a hive. For many of us, the first beekeeping days of spring are becoming real in our minds as we spend the winter remembering, planning and growing increasingly eager for another season.

NOTES FROM THE BEEYARD

THE QUESTION OF HONEY IMPORT PROTECTION
Pro and Con

1984 is a watershed year. It's a time when many things will come together and change future events in a very significant way. Some of these changes will be good, others, well...some could be downright disasterous. Much depends on the individual and upon how far people are willing to go in their responsibility to speak up and exert an opinion.

1984 is an especially good time for that. It is a presidential election year and, consequently, a good time to be vocal and expect accountability from those who represent us. Beekeepers, as we all know, are faced with more than their share of problems. Most of us have, at one time or another, heard or read discussions about import restrictions. Generally, this term means a tariff or changes in an existing tariff. A tariff seeks to equalize competition by taxing certain imported items that might otherwise be more desirable, in terms of price, to the American consumer than domestically produced items. The recent increased influx of imported honey has called the tariff issue to the forefront by many who see it as a possible means of helping American honey producers to better compete against less expensive foreign honey. Following are summaries of some of the arguments presented for and against the concept of greater tariffs on imported honey.

ARGUMENTS FOR A TARIFF

1. In 1982, more than 90 million pounds of honey were imported into the U.S. During the first 6 months of 1983, approximately 50 million pounds. That's up from 24 million pounds just ten years ago. Ten years ago, no domestic producers forfeited domestic honey to the Commodity Credit Corporation. In 1982, more than 75 million pounds went over to the CCC. Reports indicate that the colony numbers in China have risen, in just five years, from 2 to 5 million. In short, there exists an exceptional circumstance requiring intervention in the form of import protection.

2. The existing honey tariff was established in 1948 and has not increased since. It is set at one cent per pound. That is extraordinarily low compared with the traiffs of most other honey producing countries which maintain a 27 percent or more taxation on imported honey. In other words, imposing a greater tariff is not a matter of interfering with "free trade;" it is a necessity of survival, required because of the way the rest of the world handles matters of trade.

3. At present, the U.S. government is footing many bills trying to keep domestic agriculture healthy. Why should Americans be taxed to support beekeepers hurt by foreign imports when increased tariffs could provide the essential funds while actually serving to reduce the basic problem?

4. There may be no conventional cure to the problem of imported honey. It is understandable why packers, who are in the business to buy and resell honey at as little cost to them as possible, buy imported honey. There is no conventional argument likely to make them do otherwise. Conventional answers used successfully in other businesses, seem unlikely to answer the problem with honey. For example, the industry already has access to the most sophisticated processing and packing equipment available, so little cost cutting could be expected -- certainly not enough to make for competitive potential against honey producing nations where labor is extremely cheap. Also, innovative honey marketing programs, though useful, may not have the capacity to increase consumer awareness of the need to buy 100 percent American honey in the quantities necessary, or in time to keep domestic producers from suffering irreversible financial setbacks.

ARGUMENTS AGAINST TARIFFS

1. The concept of "free trade" cannot be taken when convenient and rejected when not convenient. An industry cannot tell the government to keep its hands off during good times and expect the same government to come to the rescue in bad times. The idea of capitalism and the competitiveness upon which it functions, is to provide a marketplace wherein the most efficient and the best managed flourish while the ill-prepared are forced into some other enterprise. Tariffs are an artifical device used to alter free trade from the normal channels. Such import restrictions cause domestic producers to become careless in the way they do business. An example might be the steel industry which allowed itself to become very outdated during years of enjoying the false security of protection from outside competition. It could be validly argued that greater import "protectionism" could cause the honey industry to use government as a crutch rather than to carefully improve itself through its own resources. In such a way, ineffecient pro-

ducers could actually survive rather than falling by the wayside and making room for well-organized, progressive businesses, as should occur in a democratic, free enterprise system.

2. Tariffs have caused incredible grief in the past. The Smoot-Hawley Tariff Act of 1930 provided for increased tariffs on European goods, including agricultural products, that had been being imported into the U.S. in ever greater numbers following rebuilding after World War 1. The consequence of higher tariffs was that foreign countries who couldn't sell to us in a reasonable market manner, quit buying from us, too. Their retaliation against the tariffs helped deepen the Great Depression in this country and, because of the U.S.'s role in international trade, helped cause expansive financial collapse worldwide. Today's global economy is delicately linked to so many factors, that balance can be maintained only if artifical strains are avoided.

3. You don't get something for nothing. The government is never willing to do anything without there being an exchange of some sort. If, for example, increased import protection was granted, beekeepers might well expect that the government would see this as a precedent for exercising more and more governmental control over the beekeeping industry. What began as protection might eventually become a stifling overcontrol. In other agricultural areas, for example, the government has provided protection, but has subsequently placed limits on how high prices can go. Tariffs may have long-range implications more unpleasant than the current problems that they are proposed to cure.

4. A problem cannot be solved by running away from it. In a sense, tariff "protectionism" is just that. What needs to be done is for every beekeeper and beekeeping organization, to begin building the processes necessary for a comprehensive, intense research and promotional program for American honey. After all, only through effectively promoting a product on the market, can an industry hope to compete. Through education, advertising and an all-around superior presentation of domestic honey, the American producer can expect to become competitive, even with lower priced foreign import honey. The reason is that there is not a surplus of honey in the U.S. -- there is a shortage of consumers who have been convinced that they should buy and use honey on a regular basis in a variety of ways. Promotion, then, becomes the solution to both the import problem and the everpresent need to attract more persons to beekeeping. As consumption grows, so do the numbers of individuals within the industry who are responding to the demand; consequently, the stronger the position of American honey producers in competing against imports.

The above summaries were presented as outlines of issues having many more complex angles to them. Concerned beekeepers should read their monthly journals, contact their elected representatives for information, plus use the resources of the library to further research tariffs and their possible application or misapplication to agricultural products such as honey. Then, based on an informed opinion, each beekeeper should take it upon himself or herself to share ideas with others, to voice a view to decision makers and to always remember that progress is possible only when a willingness to speak out is present.

BEE JOURNALS: A PLUG FOR ALL OF US!

If you look through a few turn-of-the-century U.S. bee journals, you'll notice that editors devoted a generous portion of each issue discussing other bee journals. Sometimes they agreed with what they had read elsewhere, sometimes they didn't; but regardless, one can sense the fraternal respect that each editor had for competing publications.

Maybe we don't do enough of that these days. Perhaps we tend to regard each other too much as competitors and not enough as folks sharing a similar interest and needing each other's help. A few of my friends have expressed surprise when I've commented that I look forward, each month, to receiving my copies of *AMERICAN BEE JOURNAL* and *SPEEDY BEE*. They didn't expect me to think favorably of the two publications that most strongly compete with *GLEANINGS IN BEE CULTURE*. But I do think favorably of them, and I read them both thoroughly.

Obviously, I'm a *GLEANINGS* partisan. I truly believe we offer much that a beekeeper can get nowhere else in quite the same way. Never-the-less, when someone asks me what I think of *ABJ* and *SPEEDY*, I tell them I benefit from and enjoy reading those publications. And I tell them that I believe every U.S. beekeeper should subscribe to ALL of the three major bee journals plus their state organization's newsletter. The reason is simple: each publication concerns itself with different issues in different ways. Reading all three is an ideal way to gain an awareness of the cross section of the many important issues related to contemporary beekeeping.

In most ways, the major bee journals share an audience more than compete for it. That is a healthy fact. And, to no small degree, perhaps, it indicates an underlying strength that may help enable the beekeeping industry to survive its present difficulties -- the strength of cooperation -- the stength of responding, together, to a shared concern or need. Despite periodic factionalism, American beekeeping has been blessed with the characteristics of a close-knit community. Like any such group of individuals (and "individual" is the applicable word in describing a beekeeper), there have been, and will be, family squabbles. When worse comes to worse, though, we probably have a better chance than most of pulling together.

A few personal comments. *THE AMERICAN BEE JOURNAL* is fortunate to publish under the professional guidance of editor, Joe Graham and Publications Director, Howard Veatch. The quality of their finished product is admirable, and the substance of their articles, in particular, the juried research features, should warrant the attention and respect of every beekeeper.

SPEEDY BEE editor, Troy Fore, is a publishing pioneer a century after A.I. Root and Charles Dadant had made a place for their publications. For that reason, he deserves public applause. To begin a new publication in a small industry already populated with two successful monthly journals, is a tremendous undertaking. Mr. Fore has accomplished his goal through an amazing amount of energy, the determination to be at as many beekeeping functions as he possibly

CONTINUED ON PAGE 81

The Monthly Honey Report

January 10, 1984

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

Wholesale Extracted	**Reporting Regions**								
Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	1	2	3	4	5	6	7	8	9
60 lbs. (per can) White	38.00	44.33	58.00	40.00	35.25	40.00	39.00	36.00	36.62
60 lbs. (per can) Amber	36.10	39.00	48.00	37.50	33.00	37.50	35.10	34.50	34.42
55 gal. drum (per lb.) White	.50	.54	.58	.58	.56		.65	.56	.57
55 gal. drum (per lb.) Amber	.48	.47	.48		.53		.60	.54	.54
Case lots — Wholesale									
1 lb. jar (case of 24)	30.50	25.05	27.40	24.54	30.30	24.50	25.00	25.50	25.91
2 lb. jar (case of 12)	31.00	23.65	24.20	23.30	25.25	23.00	25.75	24.50	24.61
5 lb. jar (case of 6)	32.00	28.15	26.25	24.27	27.50	25.50	29.50	27.00	26.56
Retail Honey Prices									
½ lb.	1.00	.89	.90	.93		.90	.88	.91	.90
12 oz. Squeeze Bottle	1.50	1.24	1.50	1.26	1.26	1.35	1.39	1.30	1.30
1 lb.	1.62	1.43	1.55	1.54	1.63	1.55	1.39	1.59	1.56
2 lb.	2.70	2.63	2.85	2.59	2.89	2.60	2.92	2.65	2.65
2½ lb.	3.55			3.25	4.04	3.25		2.79	3.33
3 lb.	4.00	3.75		3.85	4.48	3.85	4.50	3.80	3.73
4 lb.	5.00	4.99		4.94		4.80	4.75	4.70	4.97
5 lb.	6.50	6.00	6.25	5.80	5.39	5.80	5.89	6.00	6.03
1 lb. Creamed		1.75	1.55					1.60	1.55
1 lb. Comb		2.25	2.25	1.85		2.30	1.79	1.89	1.96
Round Plastic Comb	1.75	1.75	1.85		1.87		1.60	1.75	1.67
Beeswax (Light)	1.25	1.18	1.50	1.50	1.48	1.30	1.30	1.15	1.20
Beeswax (Dark)	1.50	1.00	1.05	1.40	1.15	1.20	1.25	1.10	1.10
Pollination Fee (Ave. Per Colony)	22.50	20.00	27.50		20.00		19.75	20.25	20.00

MISCELLANEOUS COMMENTS

REGION ONE

Honey sales down on both wholesale and retail levels. Severe cold during this period. Some snow. Christmas sales fair. Bees are well supplied with late honey flow surplus in some areas.

REGION TWO

No changes in local market. New York State beekeepers very much concerned over increasing rate of American Foulbrood. Even more concern with regards to future of the price support system. Many beekeepers don't like it but have no other defense in present market. Sales improving but still off from last year. Large producers who have worked on

sales promotion will again sell 100,000 or more pounds of honey. Producers who have not promoted will again be forced to sell to the government. Much poor quality honey -- amber with strong flavor -- coming onto market. Last flight day in W.V. - December 21. Maryland beekeepers anticipating cold winter have left extra stores on. Contracts and pollination prices being discussed there. Honey sales in Maryland good to date.

REGION THREE

Record cold will cause increased feeding and winter loss. Remembering 1978 when replacement bees and queens were short it may be wise to order early. Extreme cold in South will, no doubt, cause loss there, too. 1984 sales interest looks better.

REGION FOUR

December was intensely cold. Bees are wintering well but are in need of cleansing flights. Sales for December slightly improved but are still lagging behind recent years. 70 to 80 degree below wind chill factors cause concern.

REGION FIVE

Honey market normal during holidays. Extreme cold during Christmas week will

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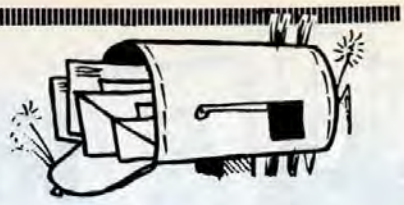
Gleanings Mail Box



Dear Editor:

I am alarmed about the many beekeepers and producers who want the government to provide tax payers money to support our efforts. This is the biggest problem we have in the American economy today—too much government. More government involvement is just what Joseph Stalin said to the visiting heads of the American Communist Party in 1940. He said "if you can get the American people to involve more government in the economic lives of the American people, we can bring them into communism and they will never know it".

Today the Occupational Health and Safety Act have laws and regulations that are in the register that govern how the cowboy should be protected when riding a horse. Do we want the government finding out that beekeepers get "stung" by bees. When they find out, the Federal Government, the beekeeper will have to wear probably a very unique protection equipment costing thousands of dollars.

Our free enterprise system was founded on free choice and not on government. The US Government did not make America great. Jamestown did not succeed until the colonists did away with socialistic concepts and made everyone work and not redistribute the wealth.

Yes, I am concerned about honey imports. But as honey producers we must find new and better ways to compete in the market place. General Motors, Ford, and Chrysler Auto did and they are making a comeback in the market place. The market place should determine the reward systems for risk, **not the government!** I believe it comes down to some basic facts, quality, products, quality service, being close to our customers, on time delivery, and a competitive price. The American public buys **Quality.**

Recently, I did not receive an order from a large super market chain for a truck load of honey because a computer provided more service and value—should the government support me! NO! NO! This is why everyone can have the opportunity for autos, TV, homes, and even honey because of our competition and free enterprise system. This great system has built a nation that has had an impact and produces more goods, services, technology, and food than any other country in the world. The government produces nothing. Just takes away the freedom of choice and more taxes.

When my beehives from one of my yards was stolen, I did not ask the government to replace them. That is the risk we take. Fortunately, I had them insured. The changes in the late 1800's and early 1900's by innovators revolutionized the way we manage and produce honey. These changes were not a result of the government.

I believe in our great system and speak out every opportunity I have at civic clubs, conventions, churches, and schools about our great country and how the explosion of government is destroying our freedom. So my fellow beekeepers and producers, let's speak our for freedom and less government involvement in our daily economic lives and the great honey industry. If we want to be "Welfare beekeepers and producers" move to another country. It is obvious that this new movement to involve government, more regulations, more taxes, will not create a new honey market. It will just cause the beekeeper and producer more money and higher prices. **John E. Allen, Ph,D. Allen & Son Apiaries**

Dear Editor:

After reading the article "Judging Beeswax" by Roger Morse I have some other thoughts on cleaning beeswax.

To remove honey and other impurities from beeswax try this: Put honey rendered wax and water in the top of a double boiler. When it has melted pour the hot mixture through a strainer lined with cloth and into coffee cans. When the wax hardens cut the bottom off the can to drain off the water and remove the wax. There will be a thin layer of impurities between the wax and water that can be scraped off. I do this procedure twice. Honey and other impurities disolve into the hot water leaving the beeswax bright and clean. To reuse the strainer pour boiling water through it. **Charlotte Morsch, Haines Rd., Mt. Kisco, NY 10549**

WAX MOTH CONTROL

Dear Editor:

In a recent issue of *Gleanings*, to control wax worms, you said to put six tablespoons of PDB on the top super of a stack five supers high. My experience, in this area, says that that won't do it. Here is what I did after several years—at least one handful of PDB in each super of a stack (scattered around) and an extra handful on top. That sounds like a lot, but in this warm winter climate it's better to be safe than sorry. Air for a couple of days before putting in colonies. **Everett Aertet, 2928 Edward Ave., Baton Rouge, La. 70808**

FRAME JIGS

Dear Editor:

In the November 1983 issue of *Gleanings In Bee Culture* under "Notes From The Beeyard: DOING A JIG: FRAME JIG, THAT IS!", on page 563 column one, the sentence beginning in the middle should read as follows: "Position them so as to leave $^{7}/_{16}$" of an inch plus thickness of insert board between the wedge and the bottom end board".

A Jig similar to this one, I have used for fifteen years. It is a great time saver and it helps to keep the surrounded air from getting too warm. **R.E. Fields, Rt. 2, Box 5, Rush, CO 80833**

WINTERING BEES

Dear Editor:

In response to the article "Wintering the Honeybee Colony", Part II, beginning on page 483 of the September issue of *Gleanings In Bee Culture*, I would like to add my experience in the wintering of colonies of bees.

Back in the early 1930's I was a new beekeeper; and by the late 1930's had started fruit pollination, and then vegetable pollination. By the late 1940's I had built up to 100 colonies, and was having a problem with ventilation. I was fortunate in having the best sources of information for advice — Dr. Ernest N. Cory, State Entomologist, at University of Maryland; George J. Abrams, Specialist in Apiculture, University of Maryland; James I. Hambleton, and Frank E. Todd, Bee Research, United States Dept. of Agriculture, Beltsville, Maryland.

Todd and Abrams and I came up with a screen the same size as the inner hive cover. It worked just fine. At first I used the screens only when moving bees.

In late 1945 I became very ill. I had got the bees home, but was not able to go through them and take the screens off and replace the inner covers for the winter. I got a student at the University of Maryland to do this.

CONTINUED ON THE NEXT PAGE

In the next spring I was able to go through the bees myself, and found that the student had only taken off about half of the screens. I also found that the colonies with the screens left on were in much better condition than those with inner covers on. Those with screens had no moldy combs. They were perfectly dry. So, from then on, I use screens instead of inner covers on my hives the year round. Many beekeepers in the Maryland-Virginia—West Virginia area are using them too. using the screens as propolis "traps" should be OK, also. I use No. 8 galvanized wire cloth. You can take a hive tool and scrape the propolis from it without damaging the wire.

To make the screen frame, use ¾" x ¾" strips for the sides and ends, with one crosswise in the middle. Put together, size 16" x 20". Tack the screen on, then use **3/8** x ¾" strips to tack on top of the screen, using strips the long sides, and on **one** end, only, so as to allow air circulation. I have been using these screens for more than thirty years.

I would appreciate any comment from readers. **James M. Marsh, 309 Lime Dr., Nokomis, Fl 33555.**

BEEKEEPERS 4-H BOOKS WANTED

Dear Editor:

Fellow beekeeper:

How many times have you heard of the passing of another old time beekeeper? You know their numbers are growing smaller every year. Have you wondered how they are being replaced? The beekeeper of today is tomorrow's old timer, but what of the next tomorrow? What are we doing to make sure there will be more beekeepers coming along to carry on our traditions? I feel the best way to insure that tradition is to share our knowledge and experiences with the youth of today. Get them interested while they are young, and you have them hooked on bees for the rest of their life.

To get more youth involved, the Virginia State Beekeepers Association has formed a committee to promote beekeeping as a project among the 4-H clubs of Virginia. However, we have found that Virginia does not have an organized beekeeping project or bee-related project books.

We would like to solicit your readers from other states, who may already have 4-H record books published, to send us a copy of their states bee-record books. We will use those received as a guide in designing a book for use by our 4-H'ers.

Getting the youngsters of today interested in honeybees as a 4-H project seems like a good way to get an early start on another generation of old timers.

Tidewater Beekeepers Assoc., W.A. Halstead, Secretary, 2122 Gum Road, Chesapeake, VA 23321.

Dear Editor:

Today in this part of Ohio the temperature is -14°F, with a wind chill factor of -53°F.

Why are we, as beekeepers, wrapping and packing and ventilating, sometimes to extremes, our colonies? It is because we, generally, have as the basis of our stock queens that are born and bred in the warmer parts of this country? Maybe if we had more northern queen breeders (there are ways of doing it efficiently!), who are concerned with developing a bee that is winter hardy and able to efficiently deal with short intensive nectar flows we as northern beekeepers would be better off. I am sure that colonies will die this winter because they are genetically incapable of surviving extremes of low temperatures. These dead colonies will, of course, have to be replaced. Instead of immediately placing an order for more warm weather acclimatized queens, let's rear our own from the colonies that survive or find someone in this harsh climate who can. It would have to be more profitable in the long run if we did. **G.W. Hayes, Jr., Hayes Apiaries, 1151 Apple Creek Rd., Apple Creek, OH 44606.**

CONNECTICUT YOUTH WINS NATIONAL 4-H ENTOMOLOGY SCHOLARSHIP

A 17 year old Connecticut girl, who discovered that eating honey might help build immunity to pollen, has been named one of six national winners in the 4-H entomology program.

Doreen Joyce Custer, West Granby, received a $1000 scholarship during the 62nd 4-H Congress in Chicago, Nov. 27-Dec. 1., 1983.

Doreen saved money from baby sitting and selling garden vegetables to buy her first colony. Her honey provides a source of relief to allergy sufferers in her community. By eating her honey, many residents built up an immunity to local pollens. Doreen later offered a free pollination service to neighborhood orchards and gardens as a 4-H project. As a junior leader she taught others how to care for bees. Two major universities have offered her early-decision acceptance into their colleges of agriculture and life sciences because of her activities with honeybees.

Beekeeping Technology

By DR. JAMES E. TEW
The Agricultural Technical Institute
Wooster, Ohio

REINVENTING THE WHEEL

A year or so ago a student of mine complained in class one day that life must have been better a hundred years ago. He went on to say that so many possibilities existed to invent gadgets -- light bulbs, asphalt highways, ballpoint pens and even plastic "Clorox" bottles to replace the brown ones I remember. I castigated the student explaining that inventions were all around us. It's just that most people have difficulty seeing them. At the time, I felt good about my explanation of creativeness and have often thought about that session. However, I am forced to admit (occasionally) that life does seem to have been more creative all those years ago. Having an original idea has truly become hard work. I offer these examples.

A non-beekeeping friend of mine suggested we construct a complete hive from aluminum sheeting. I should add that my friend is an expert welder and such plans were within the scope of his ability. My immediate reaction to the suggestion was that it was a stupid idea. I vainly tried to think of a tactful way to tell him. I felt that the indirect approach was the best. "It will be too cold. Metal conducts coldness into the hive too easily," I confidently responded. He immediately described his plan to have an inside wall not necessarily made from aluminum (maybe masonite). The space between the inner and outer wall would be filled with insulating foam. I was somewhat taken back by this plausible idea. I countered with: "too expensive -- people will never go for it." After a brief discussion of the pros and cons, the advantages we envisioned were that the hive would be maintenance free and light weight. It would stand the rigors of migratory beekeeping better than wood. It would never need painting and would not rot. Consequently, this metal hive should be cheaper in the long run. We were convinced that we should build a prototype.

For a totally different reason, I was glancing through the July, 1948 *GLEANINGS IN BEE CULTURE*. Page 464 offers a patented design on the "Superior Life-Time Aluminum Hive." It weighed nine pounds and was reported to cause less propolis and burr comb along with the advantages I have listed above. A few days later, information I'd requested from a manufacturing firm in France arrived. The basics of our planned hive were quite similar to theirs. We had our enthusiasm cooled considerably. We never got around to building our prototype.

An acquaintance of mine at Auburn University spent a considerable amount of time trying to make foundation substitutes. He first tried dipping brown craft paper into beeswax to make sheets on which the bees were supposed to build comb. They did not. He next tried dipping common window screening into wax and putting that in a frame. The bees didn't go for that either. Then he went through several bolts of thin cotton cloth that he cut into rectangles and dipped in wax. You guessed it. They didn't go for that either. At the time, even though nothing was working, I admired the beekeeper's creativeness. It never occured to either of us that all his efforts had been tried long before along with many things he didn't think to try. Actually, a small book could be comprised if all the literature on this subject were brought together. Meanwhile, he kept on busily inventing the wheel.

While attending graduate school at the University of Maryland a few years back, I had the occasion to ferment some honey to make wine (mead) in a beekeeping class. After the primary fermentation had stopped we attempted to transfer the new wine to a second jug. The class member responsible for siphoning the wine inadvertantly got a full mouth of the brew and came embarrassingly close to retching. To say the least, the spectacle had a sobering effect on the rest of the class, and we quietly dismissed the project. Approximately eight months later, long after the class had finished, I came across that jug of stuff (I don't dare call it mead). Surely, after aging that many months, it would have undergone some miraculous change in that jug and would now be a high quality drinkable mead. I confidently poured myself a full plastic wine glass (to better enjoy the boquet). I was up to step two: "Swish wine in mouth" -- before I had to dispose of it. I chose not to dispose of it by swallowing. I gave up the mead business.

Several years later, at Ohio State, a student showed a lot of interest in mead. She said it was a good project in that it would open new markets. If the mead industry should become more developed, it would help the U.S. get rid of its surplus honey. Trying to be open-minded about this mead business, I agreed to help with the project and began to amass information. One of the first major references was Dr. Roger Morse's book *MAKING MEAD*. In that text I read that many people, including Dr. Morse, already had the idea and that it had been tried extensively without a great deal of success. Another wheel reinvented.

Some research I conducted in the past involved turning queen cells upside down at specific ages. I wanted to see if I could control swarming in a small crowded hive. That work was already in the literature several years prior to my tests. How about dipping new hive bodies in various paraffin mixes? Don't bother, that's been done for years.

After awhile, this all begins to get discouraging. It's tough to be creative when so many creative people have gone before me. In many cases, they're still here. Well, take heart. Even though it seems everything has been done, all it takes is one observant person doing something slightly differently that makes an unsuccessful project a success. The concept of a radial extractor had to wait until the advent of electric motors to be practical even though the idea was many years old. The bee business needs improvements and new directions. Don't give up trying!

Questions and Answers

Q. I have about 150 pounds of dark honey, some overheated and some just from fall flowers. I want to feed this honey back to the bees in spring to stimulate early brood rearing. I will use friction top pails with small holes in top inverted over innercover in an extra hive body over the brood nest.

Can I feed their honey as is or should it be thinned down with water when put in the feeder, or would you suggest some other way to feed this low quality honey to the bees. C.F. Schad, 211 W. 4th St., Frankfort, KS 66427.

A. Honey must always be suspected of carrying the potential for infecting bees with American fouldbrood when fed. Adding antibiotics does not lessen the chance of infection.

The following process was recommended to prepare honey for feeding to bees. Prepare diluted phosphoric acid (17%) as follows: mix one part concentrated orthoposphoric acid with four parts of water. Mix one 60 pound can of honey with 30 pounds of water (about 3½ gallons), add five fluid ounces of diluted phosphoric acid and heat to boiling. Note the temperature at which active boiling begins and continue boiling for the time given below.

215°F.	2¼ hours
220°F.	1½ hours
225°F.	1 hour

If much foam is formed it should be skimmed off and disposed of, since spores could possibly survive the heating if they remain in the surface foam.

Tests on colonies of bees known to be free of American foulbrood revealed no disease when infected honey boiled by this process was fed. It can therefore be considered as a safe way to treat honey for bee feeding.

Feeding honey in the comb from colonies known to be healthy is always the safest and most convenient method. Avoid the feeding of honey extracted from brood combs. Do not feed burnt or caramelized honey. The feeding of honey is best done after bees have begun to have unrestricted flights in the spring. Be careful in the feeding of fermented honey. It is best to prepare honey/water mixtures just prior to use as this prevents some of the natural fermentation from taking place.

Q. Is it feasible to have a small apiary permanently on a trailer and move it from place to place to catch the honey flows? How close together can you put the hives? Clif Osterman, Rt. 3, Box 103, Goodland, KS 67735.

A. My experience with moving an apiary from place to place on a trailer has been discouraging, though I see no reason why it should not work, provided the bees are moved into a new area well in advance of the honey flow, so that they can become oriented in time to take advantage of it. A mobile apiary is very valuable in areas of intensive spraying of pesticides. The hives on a trailer can be as close together as one pleases, but if there are more than four facing the same direction then at leat one or two should be of different colors, to avoid drifting. **Richard Taylor.**

Q. We are wondering about the true value of pollen traps. Would their use possibly slow down the workers to the extent that honey production loss would outweigh the value of the pollen obtained? What is the best type of trap to use, bottom board type or external? What is considered average pollen production for a colony when using a pollen trap? R.F. Lightsey

A. There are a number of designs of pollen traps on the market, some more convenient than others to use. Some traps are better than others in respect to efficiency in removing pollen as the foragers pass through the trap screen. Some, better than others, protect the gathered pollen from rain and dampness. Traps vary according to the degree of litter accumulation in the collecting tray. All pollen traps present a barrier to bees passing through. They are functional but the ideal of stripping the clumps of pollen from the legs of the returning bees without impeding the free movement of bees gathering nectar cannot be expected from the available models on the market. Some pollen trap instructions recommend leaving pollen traps on hives throughout the summer, apparently based on the assumption that sufficient pollen traps will be carried through the screen to provide for brood rearing. Other instructions suggest periodic removal of the trap or activating a by-pass arrangement that allows bees to bring in the pollen unimpeded by the screen of the trap. In most pollen traps this does not necessitate the removal of the trap from its normal position on the hive. Some pollen traps mount at the hive entrance but others require that the trap be installed by lifting the hive bodies off of the bottom board and replacing the brood chambers. Removal of the trap entails the same procedure, in reverse, at the end of the pollen trapping season. Another feature contributing to pollen trap effciency is a drone escape. Drones cannot pass through the screen of the trap and an exit must be built into the trap to avoid congestion from drones seeking an exit through the screen.

The average annual yield of pollen may vary from region to region, season to season and between individual colonies. Pollen collection rates vary during the season, often being heavy in the spring, subsiding during the mid season and picking up again in the fall.

Q. What is the proper way to move a hive about 30 feet without losing the bees when they fly out and return to the old hive location. I moved my hive on 12/15/83 and kept them confined for several days with screen, but as soon as the screen was removed hundreds flew to the old location and most died. I hope the bees remaining will not to the same. Can you offer some tips? Warren Brewster, 1 Keane Terrace, Natick, Mass. 01760.

A. Moving bees a short distance without experiencing loss from bees returning to the old location is very difficult. Winter or late fall movement should be made after honey flows have ceased, but before or soon after the bees have formed a loose cluster. Colonies moved in late autumn months consume significantly more honey than those not moved, and that too, must be taken into consideration.

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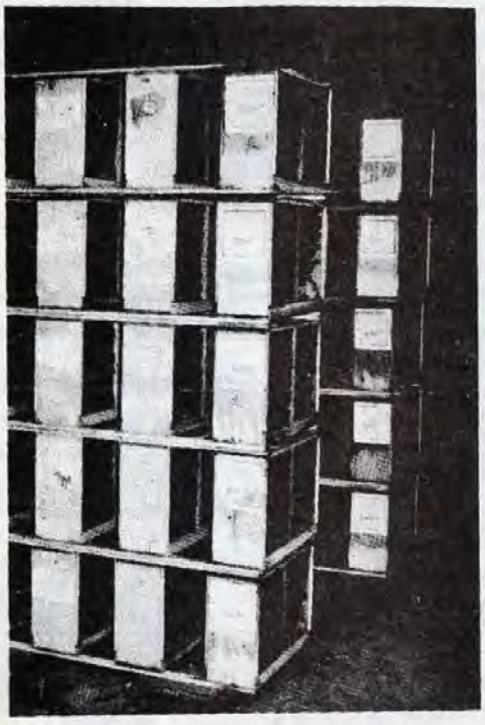

April 1984

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June 1984

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Research Review

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

The Effect of Temperature on the Manufacture of Honeycomb

Those interested in mechanics and the efficiency of the honeybee colony have always been fascinated by honeycomb and its construction. Studies in South Africa show that when the temperature is increased by 5°C (about 10°F) the energy required to work the wax into comb is halved.

Honeybees control their nest temperature very closely, keeping it quite high. This not only results in a uniform development time for the brood, but also makes it easier for the bees to build comb. Of course, there are practical limits to be considered; an even higher temperature would make it still easier for bees to build the comb, but then the comb would lose strength and the temperature would be lethal to the brood.

Honeybees, through years of evolution, have, it seems found the most practical and reasonable solution. They maintain a nest temperature that is best from many points of view, including efficiency of construction. This is especially important insofar as the founding of a new nest is concerned; a swarm has a limited amount of time in which to build comb, rear brood, and collect food for the harder times (such as winter or, in the tropics, the dry season) that are bound to follow.

Sources

Hepburn, H.R., E. Armstrong and S. Kurstjens

The ductility of native beeswax is optimally related to honeybee colony temperature. South African Journal of Science 79:416-417. 1983.

The Confusing USDA Grading System

An area that needs study and work is the way in which the USDA grades the 155 agricultural products that it oversees, including honey. One writer in the 1982 Yearbook of Agriculture, that gives more detail, said, "The Federal Government has provided uniform trading terms" etc., a statement with which I would argue strongly. The USDA grading system is really a hodgepodge of words, letters and numbers, many of which are obviously misleading.

Some of the products and the grades used for them are as follows:

Eggs: AA grade, A grade

Beef: Prime, Choice and Good

Fresh Fruits and Vegetables: U.S. Fancy, U.S. No. 1, U.S. No. 2., U.S. No. 3

Processed Fruits and Vegetables (including Honey): A, B, C and D

It is correct that the grading system is designed primarily for the wholesale buyers and sellers of products but often one sees the grades in print, in ads and sometimes on labels and this is where the confusion lies. I can remember this problem being talked about when I was in grade school but there has never been enough interest or push to make meaningful changes. I happen to believe the system for grading honey is an honest one but when other agricultural products are graded in different ways the unknowing consumer is stuck.

Australia Bans Pollen Imports

It was announced a few months ago that the Australian Minister for State of Health has banned importing pollen into that country. The chief concern cited was the danger posed by chalkbrood, a fungus disease of honeybee larvae. The action had strong support from the Federal Council of Australian Apiarists' Associations and several state associations and individuals in that country.

In North American, too, there has been talk about banning the importation of pollen from abroad. I think it would be a good idea. Chalkbrood is already widespread in North America but there is always the danger of bringing in an exotic or more virulent strain. More important is the possibility of importing an unknown bee disease. Our recent experience with chalkbrood and various species of mites indicates that there are still bee diseases about which we know too little. It would seem that extra caution is advisable.□

Pollen importation prohibited. the Australasian Beekeeper 84(3):42. 1983.

In the October, 1983 "Research and Review" column a citation was inadvertantly omitted from Dr. Morse's review entitled: "Hygenic Behavior and Chalkbrood." It reads as follows:

Gilliam, M.S., Taber 111 and G.V. Richardson. "Hygenic behavior of honey bees in relation to chalkbrood disease." Apidologie 14:29-39. 1983.

IT PAYS TO KNOW

How to . . .

By P.F. THURBER
5522 127th Ave. N.E.
Kirkland, WA 98033

PIGGYBACK REQUEENING

It blows one's mind to discover how many hobby beekeepers have kept bees for years but have never requeened with a queen purchased from a queen breeder, have never picked up a queen off the honeycomb and/or have never marked one. You wonder what they do when they find a queenless colony. Obviously,all they can do is: 1.) combine the hive with a nucleus that has a queen or 2.) make a split and let the bees raise a queen from the queenless side of the split hive or 3.) give their queenless hive a frame of eggs and young larva or 4.) give the queenless hive a swarm. Do any of these methods constitute good beekeeping? I think not, because while the best solution is combining with a nucleus, you do not get the improvement you probably would by using a queen from a breeder whose queens produce bees that are docile (good natured), quiet on the comb and productive. Second, when you let queenless bees raise their own queen you probably will not get surplus honey from that colony unless you have a very good autumn honey flow.

Next, you wonder why more people don't learn to requeen. I think part of the reason may be that there are so many ways to requeen, and the beginner gets confused or mixes up the techniques, has miserable results, and so says forget it. A typical, many times repeated, mistake is made by many bee associations. They set up a panel of experts at the front of the room and each expert discusses how he or she requeens. The reasonably competent get ideas which are then, presumably, tried. But the beginner just sits there, possibly scribbling notes like mad, while becoming more and more confused. Then, being so confused, he or she never tries to requeen or is unsuccessful, therefore making no further attempt.

I do not know who it was in our Puget Sound Beekeepers Association who recognized the problem. Maybe it was me; maybe it was James C. Bach, now our Chief Apiary Inspector for Washington; maybe someone else. But, anyway, an informal group decided that our association would teach one and only one method of requeening. We chose the method involving piggyback requeening which, while not the most simple, has the highest percentage of success. We got the cooperation of Sharon Colman, then and now our County Cooperative Extension Entomologist. Somehow, she was able to take a *GLEANINGS* article, "Spring Requeening Sure Fire," which I had written, and put it out as a county extension publication after a few changes were made. The extension publication has been available for county residents for about ten years.

I would be lying if I said the publication solved all our problems locally, but I think it's been useful. The identical text has several times been reprinted by the Washington State University for annual state meetings, for distribution at the biannual Northwest Bee School, etc.

You are wondering, do we ever teach other methods of requeening. Of course we do. But, in our meetings and classes, we always say: learn piggyback requeening and then, when you have that method down pat, try other methods if you wish.

With that as an introduction, herewith presented is our extension publication.

SUREFIRE QUEEN INTRODUCTION

Dr. T.S.K. Johannsen, American Editor of *BEE WORLD,* **recently wrote an eight installment article on various ways of requeening. This article was printed by** *AMERICAN BEE JOURNAL* **Hamilton, Illinois, 62341. In the article, Dr. Johannsen pointed out that the safest method of requeening was to start a nucleus and introduce the new queen to the nucleus; then, after killing off the queen in the colony to be requeened, combine the nucleus and the hive with the newspaper method.**

Prior to Johannsen's work, *GLEANINGS IN BEE CULTURE,* **Medina, Ohio 44256, printed "Spring Requeening -- Surefire" by Roy Thurber, former Washington State bee inspector, which was run in the December, 1970 issue. This is a summary of that method.**

Queen introduction can fail if the bees do not like her, she does not smell right, act right or does not lay eggs at the rate the bees expect her to lay. Obviously, they compare her to their present/past queen who does/did smell right, act right and lay the way they thought she should. In introducing a queen, all of the following factors must be considered.

Make up a piece of 3/8 or ¼ inch plywood 16 ¼ x 24 and cut a hole about 4 x 5 inches or a little larger in the center rather towards one end. Cover this hole with window screen on both sides and nail ¾ x 3/8 inch strips on the long side and across the end nearest the cut-out double-screened hole. This makes an "upper" bottom board. Then cut another piece of plywood 16¼ x 20 inches. This is a smell barrier. Alternately, use a piece of plastic sheeting for a smell barrier.

Now, if you put that 16¼ x 20 inch piece of plywood on top of an existing hive then put the upper bottom board on top of that and another hive body on top of the upper bottom board, you would have a piggyback hive and the smell of the lower queen would not waft up into the upper hive. Right there you stop part of your problem of requeening -- the smell of the lower queen does not get into the upper hive during a period of possible uncertainty.

With the smell board and upper board and the arrival of the new queen, you are ready to start. First, give the new queen and her attendants a drop or two of water off your fingertips through the screen of the queen cage. Then go out to the

CONTINUED ON THE NEXT PAGE

colony to be requeened and set a third hive body on top of the double-screened upper bottom board with the smell board below it. The third hive body should contain nine drawn combs (if these are filled with honey it would be better yet). Remove five of these frames from the center of the nine and stand them on edge leaning against either hive. Then be quick -- from the hive to be requeened, remove an outer frame and then look for the two frames of preferably sealed brood with bees on them and put them in the center of the hive body on the upper entrance board. MAKE SURE THE OLD QUEEN IS NOT ON THESE FRAMES. Then find two well-filled frames of honey and place one on each side of the brood in the third hive body again making sure the old queen is not on either of them. If you can quickly find a frame of pollen, add that to the four frames in the third hive body and then add the other frames on the outside of the honey frames in the hive body. Finally, shake the bees off one more frame into the third hive body.

With the nucleus set-up, take the queen cage with the new queen in it but not the attendants which accompanied her in the shipping and place it sideways between the two frames of brood so the queens can feed her through the screen until she is released. Normally, the worker bees in the nuc will do it in two or three days if you remove the cork plug from the 'candy' end of the queen cage and poke a very small hole (the size of a number four nail) through the candy, starting at the end from which you have removed the plug. If you have removed the attendants from the new queen's cage, the candy end points down between the frames. If you do not remove the attendants, put the candy end up. This circumvents attendants dying and clogging up the candy end from which the queen will be released. Now replace the cover of the nuc. Under the cover you should place several number eight nails This allows ventilation for the bees in the nuc. You do this because while you are setting up the new colony in the third hive body (nuc) all the old bees fly out and all you have left are nurse bees. With no guard bees the nuc could be robbed. In four or five days some of the nurse bees will be old enough to be guards.

That accomplished, you now crowd all the remaining frames of the upper hive body of the hive to be requeened to the center and add frames standing by the side of the hive to each side of the hive body and fill all the space. You then lift the nucleus, its bottom board, and its smell board on top of the hive to be requeened. after adding an entrance feeder to the lower hive body you are done for the next three or four days.

Your next step is to open the entrance to the nuc. The opening should be small, say about 3/8 x ½ of an inch wide. The next day, after all the bees that are flying learn their entrance to the nucleus, remove the queen cage if the queen has been released. If she is still in the cage enlarge the hole in the candy and replace her for another day or two. If the cage is empty, look between the frames. If there is no burr comb built between the two frames, slowly replace the two frames to the corrct distance and add a tenth frame.

It is absolutely necessary to use NO smoke during these operations. You do not want to disturb the bees in the nuc. They are not yet thoroughly familiar with their new queen; alarm them and they may kill her. However, the chances of this happening are much less than the chances a new queen encounters in direct introduction methods, because there are only young bees in the nuc and they normally show no hostility to a queen, even a new one, after a few days.

As mentioned earlier, one reason that bees kill queens is that the queen does not lay the way bees think she should or in the amount they think she should. In a nuc of young bees, there are not enough bees for a queen to lay heavily. There just aren't enough bees to attend to a lot of brood, so the queen has time to recover from the traumatic effect of mail shipment.

In a day or two (always work bees when the temperature is in the sixties, or higher, if possible), check to see if the queen is laying. If she is, remove the smell barrier. Don't take time to look for the queen, but do remove any queen cells if they are present.

One of the major causes of losses of breeder raised queens is early supercedure. No one knows if a bee thinks or not, but some way or another they seem to know that the queen was caged. They have no way of knowing if she will "escape" so, if they can, they will raise queen cells just in case. Having made the cells they generally won't tear them down in a situation like this, so they supercede your new queen. It is imperative, therefore, to cut out queen cells within nine days of setting up the nucleus.

In about three weeks to a month, set off the nuc, go downstairs and kill off the lower queen. Place the nucleus back on top for a few days. During that time the smell of the upper queen will permeate the whole hive and you can then merely remove the double screened bottom board after you make sure there are no newly constructed queen cells in the lower hive. Or, if you are cautious, you can remove the double screened bottom board, lay one piece of newspaper over the old hive and set the nuc on top. Again, check for queen cells (within nine days) this time in the lower hive.

For emphasis -- do not try to requeen until the temperature is at least 55 degrees. The higher the temperature the better. You can keep the new queen and her attendants for a week if you keep the cage warm, but out of the sunlight, and give them a daily drink of water. Keep the candy end of the cage up so the water does not wet it.

CONTINUED ON THE NEXT PAGE

Many people order their queen too early. Unless you plan to make divides, queens arriving between May 1 - 15, face less weather problems than queens arriving in April when weather is cooler and less predictable. If the queen comes in cold weather, call an experienced beekeeper to get instructions on how to set up a queen bank until the weather warms.

Again, for emphasis, do not use smoke when setting up your nuc and when checking it, until the queen is laying well. Panic the bees and they may kill your new queen.

Make sure the bees always have plenty of honey or sugar syrup, because two queen colonies use up stores at an alarming rate. If they need feeding, you may have to have both a top feeder on the nuc and a bottom feeder on the lower hive. Also, keep checking that neither hive nor nuc is getting crowded. If that happens they may swarm. If they need space, add it.

If you wish to run the colony as a two queen colony longer than a month, go to the library and read up on two-queen management. There is a lot of work involved and greatly expanded honey yields have been obtained in good years. But, not only the bees, but you, will have to work for it.

Do not think that requeening is too much work. And, if you live in a residential area, remember that breeder raised queens produce gentle, good tempered bees. THEY ARE A MUST! Bad tempered bees can get you sued and bring ordinances against city/suburban beekeeping.

If there is a bee association -- join it. Not all you will learn will be 100 percent correct or useful, but talking with other beekeepers will give you courage, especially when you learn all of us are not perfect and do make mistakes.

NEXT MONTH: Variations On Piggyback Requeening, by Roy Thurber.

BEEKEEPING FOLK ARTS

Honey & Hive Products For Cooking & Other Home Uses

by Amos Arbee

During my school years, one teacher in particular stood out from the rest because of his cliche. As students will be students, we all had our share of excuses when it came to not turning in our homework. So, this teacher used to say in return: "Oh well, some kind of excuse is probably better than none at all." That brings about another matter I am sure all of us have experienced at one time or another. You get appointed to serve on a committee for whatever purpose it may be intended . Then you begin your duties of calling on the telephone and asking for whatever assistance is needed. Whoops -- it all starts almost as if the whole ceiling were about to come falling down on your head. "Well, I would if I could but I have no time. I have other things scheduled, etc., etc...." This usually brings back to mind the cliche of my school teacher. Well, with honey in cooking and baking, no excuses are needed, whatsoever. Honey is an excuse within itself to do some baking. The results usually bring out nothing but class itself in every respect.

HONEY CEREAL MACAROONS

2 egg whites
I cup honey
½ tsp. salt
½tsp. almond extract
1 cup shredded coconut
2 cups, flaked ceral (your choice)

Beat egg whites until foamy, gradually beat in honey and salt. Continue beating until stiff, add almond extract. Fold in coconut and cereal, drop by teaspoon onto greased cookie sheets. Bake in moderate oven (325 degrees) about 15-20 minutes.

It seems that at the moment of something we think of as "earth shattering," we feel that the news of such an event will probably dominate the newspapers' front pages for days, even weeks. At one such time I made a similar observation to a friend who in turn said, "That too will pass with time." Somehow, I've never let that particular statement slip from my mind. Of course, one thing that will not pass with time is the use of honey in our cooking and baking. It will probably remain ever more steadfast with time to prove what has really been established as something that does, indeed, greatly benefit our recipes.

HONEY NUT TORTE

3 eggs
1 cup honey
3 tbs. water
2 tbs. fine bread crumbs
2 tsp. baking powder
1 cup chopped nuts
½ pint heavy cream w/honey to your taste

In large bowl, beat eggs until they turn light yellow when thick. In a small bowl, mix honey and water. Add to eggs in small amounts, beating well after each addition. Combine bread crumbs, baking powder and nuts. Add to egg mixture gradually, beating well after each addition. Line two 8 inch round cake pans with waxed paper. Divide mixture evenly into the pans. Bake in a preheated oven at 325 degrees for about 30 minutes. Remove from pans and allow to cool. Whip half of cream with honey to taste until thick. Spread over one layer of cake with half of cream. Cover with the other layer and refrigerate. Just before serving, whip other half of cream with honey to taste and spread on top.

MICHIGAN YOUTH WINS NATIONAL 4-H SCHOLARSHIP

A 17 year old youth, Bradley Marks, of Ida, Michigan, received a $1000 scholarship during the 62nd National 4-H Congress in Chicago, Nov. 27 - Dec. 1, 1983.

Bradley's projects involved honeybees, which he became interested in as a result of his father owning bees. Bradley worked his way up to 12 colonies, then found a local vegetable grower willing to rent his bees for pollination. With assets from that and honey sales, he soon purchased more equipment with his savings and a loan. Good management permitted him to repay the loan within a year. Within several years, Bradley has built up to 97 colonies. He plans to use his bees to fund his college education.

A GLEANINGS INTERVIEW

RICHARD MAY

Richard T. May (Tim) was a biology student at Nasson College in Maine and became a beekeeper in his final college semester while doing a special independent beekeeping project. Having developed a serious case of "bee fever" from the project, he drove 1,200 miles to Georgia, where he located Rossman Apiaries and landed a job on their doorstep. He later returned north and established several apiaries on Block Island, R.I., about 14 miles off the Atlantic coast. Block Island honey is prized because of its fine granulating ability which makes for a smooth consistancy. Block Island honey is sold mostly as a Raw, Cream Style honey. In addition to offering a potential for raising queens should the Africanized bee cause a problem in this country, Block Island presents unusual challenges for the beekeeper, as will be discussed in this interview.

IT SOMETIMES SEEMS FOLKS FORGET THAT THE CIRCUMSTANCES AFFECTING BEEKEEPING CHANGE FROM REGION TO REGION. YOUR OPERATION WOULD BE A PRIME EXAMPLE OF THAT, WOULDN'T IT?

Block Island beekeeping is regional and isolated. Supplies move via ferry, small plane or private boat. The island has a good tourist trade keeping it alive, and makes for good honey marketing. Most of the honey is sold through a place called the Red Shutters. We rely on the fact that our honey is finely granulated and different in appearance. These characteristics make it very popular. Block Island honey makes for a very nice spreading honey and an inexpensive token of Block Island that people can take home. It is a piece of the island at a baragin price compared with the $20,000 and up price per acre of land. A large percentage of the crop is sold on the island.

WHAT ARE SOME OF THE ENVIRONMENTAL PECULAIRITIES YOU FACE?

WIND. The average year round win speed on the island is about 16 mph. Windspeed in winter can reach upwards of 80 and 90 miles per hour as a result of open ocean surrounding the island. Wind, with cold and dampness is not conducive to good wintering of honeybees. Replentishing the supply of bees with heathy young bees and a nice young queen every year can be a suitable alternative to wintering. We have tried everything, including island wintering, wintering bees in costal North Carolina and no wintering at all. Winter strain and stress from the island can be severe, leading to spring dwindling, winter kill and nosema. In some years, the stress of spring can be especially tough on the bees as a result of the hard-to-use granulated sugar in the combs. Honey production has varied wildly from 30 to 80 plus pounds per colony. Wind appears to wear out the bees' wings more quickly and makes spring cleansing flights less possible. Good management techniques are most important in beekeeping for good production. Some bees can fly higher and faster, but without good management you are lost. I do appreciate some bees more than others.

WHAT DO YOU DEFINE AS GOOD MANAGEMENT?

Efficiency in operation and keeping your bees clean are important in managing multiples of colonies. I do not medicate with the exception of Fumidil-B which I use to keep the stress related nosema at a low level. Without medication I can pinpoint disease more easily and nip it in the bud before it spreads. My theory is that nosema free bees are better able to cope naturally with other diseases and the cool damp conditions of the island. Different colony manipulations are forms of management that directly affect honey production, pollen gathering, queen rearing and, above all, bee production. Good management can be little things like scraping and saving excess wax, or cleaning bottom boards and end bars to reduce wax moth egg sites. How to use a hive tool effectively can reduce wear and tear on hive bodies. Knowing how to repair hive bodies; conserving and using, rather than wasting and throwing away. Maximize equipment use and reduce unused, idle equipment.

HOW HAVE YOU, PERSONALLY, RESISTED THE URGE TO OVEREXTEND YOURSELF?

Every beekeeper has to learn to cope with wanting to expand. My original goal was to establish 100 colonies on Block Island. I now have 135 colonies with approximately 85 on Block Island, and I don't want any more. We are trying to make a living at beekeeping. We get a premium price for our Block Island honey at $3 a pound on the island and $3.50 when gift packed. We aren't making a fortune, just a living.

HAVE YOU MADE MANAGEMENT MISTAKES THAT MIGHT SERVE AS LESSONS TO OTHER PEOPLE?

I've avoided one mistake by never painting my hive bodies. I use linseed oil. On the island I have problems with moisture. Paint traps moisture in wood and makes it rot faster. Linseed oil soaks in and leaves a wax-like film when dry, allowing wood to breathe, preven-

CONTINUED ON THE NEXT PAGE

ting rot. With oil the hives darken in time and become less visible. The darker color is a bonus for heat absorption with the island's cool, damp spring. Linseed oil can be applied right on the hive while occupied by bees. Recently, I've begun using different colored entrance patterns which, according to the theories of Karl Von Frisch, aid orientation. Too many beekeepers put too many hives in a straight row facing the same direction. This allows for drifting and increased chance of spreading disease. In the past two years I've tried to set up bee yards in a circular fashion to aid orientation and reduce drift.

WHAT SPECIAL SEASONAL PREPARATIONS DO YOU MAKE?

For winter I ventilate by leaving the inner cover in place while tipping the outer cover up in the rear of the colony. In the heat of summer I may take the inner cover right off and tip the outer cover to encourage air passage. In April we often feed to stimulate brood production. When the colonies build up enough we remove the entrance reducers which keep out the Voles. Voles look like mice but are actually indigenous to Block Island and can, like a mouse, make a real mess inside a beehive.

WHAT IS ON YOUR MIND WHEN YOU'RE ON YOUR WAY TO THE APIARY?

As every beekeeper I anticipate with a certain sweet excitement the progress of the bees before arriving at the yard. But conditions in the yard change from day to day and year to year. You need to assess things based on your past experiences or knowledge. Like putting your wet honey supers on at the end of a summer's harvest and having all your bees and your queen follow through the hole on the inner cover and enlargen the top honey supers and finding yourself, in mid-February, with all your honey in the brood chamber and your bees in the top honey supers. That type of thing is a major management mistake as a result of ignorance. Much of the time I am thinking about what I need to do in the apiary once I get there.

TAXATION OF THE HOBBY BEEKEEPER

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The issue of whether a beekeeper's activities are carried on for profit or are hobbies is the starting point for determining the federal income tax status of the activities. As the reader is about to learn, the income tax benefits available to the hobbyist are quite limited when compared to the income tax benefits available to the for-profit beekeeper. However, not all beekeepers will be able to prove their activities are being carried on on a for-profit basis and so will be deemed by the Internal Revenue Service (IRS) to be hobbies. This article assumes your beekeeping activities are hobbies. It covers the federal income tax treatment of a hobby (not-for-profit) beekeeping activity. While the article may appear complete, a qualified tax professional should be able to provide further assistance in this area and such consultation is highly recommended.

Just because you conduct your beekeeping activities as a hobby does not mean that you may not deduct some, or possibly all, of the expenses you occur in those activities. However, if your beekeeping is not carried on to make a profit, the deductions you may take are limited to your gross income from beekeeping and no loss will be allowed to offset gross income from other sources. This limitation applys to individuals, partnerships, estates, trusts and Subchapter S corporations.

Assume you have a daughter who expresses an interest in beekeeping. You loan her the money and she purchases some hives and the necessary bees and equipment. Due to a natural ability your daughter shows to work with bees, as well as good weather and lots of work and study, the bees' honey brings home some prizes from several large fairs where she exhibited it. Your daughter is approached by a market owner who offers to buy her honey for $100. She accepts and you ask what the federal income tax consequences are. It is obvious that your daughter must include the $100 payment she received in gross income. It is also obvious that she is engaged in a hobby. Thus, the real question becomes what, and how much of, the expenses your daughter incurred may she properly deduct from the $100? When you consider all the money spent on supers, foundation, etc., the question becomes more relevant.

THE CATEGORIES OF DEDUCTIONS

Because your daughter's activities were carried on as a hobby, she is allowed deductions only in the following order, only to the extent stated below in the three categories, and only if she is able to itemize them on Schedule A of her tax return (Form 1040).

First, she may deduct the costs which would qualify as a personal, as well as a business activity, deduction. All the normal nonbusiness deductions, such as those for interest, taxes and licenses, casualty losses, and contributions belong in this category which we call category one. These deductions may be taken to the full extent they are allowed by the relevant sections of the tax code. However, the amount of these deductions must be determined after taking into account any limitations or exceptions provided in the tax code. For example, the first $100 of a casulaty loss is not deductible. Also, a nonbusiness casualty or theft loss is deductible only to the extent that your total losses during the year exceed 10 percent of your adjusted gross income.

Secondly, your daughter may deduct costs which do not result in an adjustment to the basis of property, but only to the extent that her gross income from the activity is more than the deductions she took, or could have taken, for it under category one. Most beekeeping expenses, such as feed, tools, equipment, medicine, legal and accounting fees, and hired or consulted labor, belong in this second category.

Lastly, she may deduct the third category of deductions, those which decrease the basis of property, but only to the extent that the gross income from the activity is more than the deductions she took, or could have taken, for them under the first two categories. The deductions for depreciation, partial losses with respect to worthless debts, amortizable bond premiums, accelerated cost recovery system deductions (ACRS), and amortization are involved in this third category. Where more than one asset is involved, depreciation and these other deductions must be divided proportionately among those assets as discussed below.

BASIS ADJUSTMENT

If you operate a beekeeping activity as a hobby, have more than one capital asset, and are allowed category three deductions (those affecting basis), then the amount of the category three deduction allowed to each asset must be determined seperately. To do this, you need to calculate what is called your "basis adjustment fraction." You must take this calculation for each seperate year in which you carry on your hobby. Your basis adjustment fraction for any given year has a numerator which is equal to the total amount of category three deductions which are allowable to you under your gross income limitation for that year and a denominator equal to the total of your category three deductions which would have been allowed with respect to the activity if it had been an activity carried on for profit. You then multiply this basis adjustment fraction by the basis of each asset to receive the amount of the allowable deduction for that specific asset for that year. The basis of the specific asset is adjusted only to the extent of the amount of the deduction attributable to that specific asset.

EXAMPLES

Let's look at an example to see how the whole system works. Assume you are given four hives by an experienced beekeeper who is moving to Nome, Alaska. Due to the good weather and lots of hard work and study, your bees provide you with a large amount of honey and beeswax. You sell this during the year for $300. On the first day of January of this year you purchased two small used honey bottling machines for $100 each. During the year you spent $40 on interest on a loan you took out to buy the bottling machines and other necessary equipment, $10 on a state-required apiary license, $30 on sugar for feed, $30 on labels and jars, $50 on small tools to maintain your hives and collect your product, and $150 to a professional beekeeper for advice and consultation.

To calculate your federal income tax, you first calculate the amount of your gross income from beekeeping. In this example it is $300. Next, you calculate the amount of

CONTINUED ON THE NEXT PAGE

your category one expenses. These total $50 ($40 interest and $10 license). Next, you calculate the maximum amount of category two deductions you may take. The maximum amount of these deductions for this year is $250 (gross income of $300 from which the $50 of category one deductions is subtracted). You have total category two expenses of $260 ($30 sugar feed, $30 jars and labels, $50 tools, and $150 professional consultation). Of this $260, you may deduct only the amount allowed by the limitation calculation, in this example, $250. This means your gross income of $300 will be reduced to zero and thus not be taxed ($300 income minus $50 of category one deductions minus $250 of category two deductions yields zero) and you will have $10 of category two expenses which are not deductible because they exceed the limitation amount. Since you have reached the limitation amount by using only category one and category two deductions, no category three deductions will be allowed for this year.

Now, let's assume that all the facts remain the same except that your professional charged no fees for his consultation so you did not spend $150. To calculate your taxes you first again calculate your gross income (still $300). Next, you again calculate the amount of your category one expenses (still $50). Next, you compute the maximum amount of category two deductions you may take. The maximum amount of allowable category two deductions is still $250 ($300 income less $50 category one deductions). You now have a total category two expenses of only $110 ($30 sugar feed, $30 jars and labels, and $50 tools). Because this amount is less than the $250 maximum allowable deduction, you may deduct the full amount of your category two expenses. Now, because your combined category one and category two deductions were less than the allowable maximum amount, you may also deduct category three deductions until your limitation amount is reached. Thus, you may deduct $140 of depreciation ($300 income minus $50 category one deductions minus $110 category two deductions leaves $140 remaining). Assume each honey bottling machine generated $80 of depreciation for the year for a total of $160. Since this total is greater than the $140 amount allowable under the limitation calculation, you must adjust the basis of the bottling machines because you may deduct only $140 of depreciation (thus reducing your income to zero).

To do this, you first calculate your basis adjustment fraction as explained above. In this example, your basis adjustment fraction is 140/160. This is calculated by taking the remaining deduction still allowed by the limitation calculation ($300 income less $50 category one expenses less $110 category two expenses leaves $140) as the numerator and making the denominator the total category three deductions which would have been allowed had your beekeeping been engaged in for profit (given as $160 in this example). To adjust the bottling machines' basis, you will merely need to multiply the reduction fraction times the depreciation amount for each bottling machine which would have been allowed had your beekeeping been a business. Thus, $80 for one machine times 140/160 equals $70 (140 ÷ 160 equals .875 x $80 equals $70). That is the amount by which its basis must be adjusted. To adjust the basis, subtract the $70 from the original basis (cost of $100) to produce an adjusted basis for the machine of $30. The same calculation will then be used for the second bottling machine and the same result will be obtained. You may not claim depreciation on the hives in this example because they were given to you for free.

In some cases, you may be able to deduct the cost of category three assets (such as the bottling machine) without using depreciation. A special election allows taxpayers to currently deduct up to $5000 of category three assets rather than taking a depreciation. You may aloso be able to claim an investment tax credit for the cost of category three assets. Special rules also apply if you have capital gains or losses from beekeeping. See you tax advisor if you believe any of these situations might apply to you.

Once you have gone through these calculations a few times they will become much simpler for you. Just remember a hobbyist may only deduct amounts up to his or her gross income from the activity and must deduct expenses in the proper order. These examples showed the beekeeper having more expenses than income. If, after performing the calculations, you still have income remaining, you must include it in taxable income on your federal income tax return for that year.

As the reader can see, the hobby tax laws present a major problem to the hobby beekeeper -- the limitation which provides that a hobby beekeeper may not use a loss from the beekeeping activities to offset other gross income. The presumption in the tax code that a beekeeper is not engaged in a hobby if a profit is shown in two out of five consecutive taxable years is usually not very helpful because it very well may take five or more years before a profit is shown. The beekeeper is thus under the constant threat that the IRS will audit the activity, claim it as a hobby because no profit was shown, and disallow any losses which were reported. In order to deduct these losses, the beekeeper must prove he or she is engaged in a for-profit business.

Lee D. Kersten is an attorney, in Eugene, Oregon, specializing in agriculturally related legal and tax issues.

HONEY REPORT

CONTINUED FROM PAGE 61

weed out weak colonies. Moisture conditions satisfactory. Most beekeepers not expanding operations due to slow honey sales and high priced supplies. Much discussion about the future of beekeeping. Prime bee pasture being sought in above 240 day frost-free area. Florida suffered severe frosts damaging most honey plants. Total harm yet to be evaluated. At this time, build-up does not look positive. Plenty of feeding evident.

REGION SIX

Cold and ice. Local honey remaining. May have high bee loss.

REGION SEVEN

Extremely cold. Caught some off guard. Several migratory beekeepers have not completed southern moves into Texas. Bees in good condition due to strong fall flow. Local honey in good demand on retail market. One truckload (45,000 lbs.) Canadian white honey delivered with no barrel exchange into central Texas at 55 cents per pound. Rio Grande Valley hit by hard freeze. More than 100 million dollars damage to fruit trees and sugar cane. 1984 spring orange blossom crop lessened by 70 - 90 percent. Honey demand steady. Some areas in South Texas becoming dry due to dry fall and early winter.

REGION EIGHT

Weather seasonal and mild in Arizona. Colonies in good condition. Severe cold in Montana. Snow will provide good spring moisture and irrigation storage, but feeding may be required. Only 1 flight day in the past 35 in Colorado. Retail demand and prices steady.

REGION NINE

Honey sales fair through December in Washington. Extremely cold. Snow about normal. Bees seem to be holding up well. California: bees wintering well with sufficient supplies.

FIRST FLIGHTS
NEW PRODUCTS COLUMN

SMOKER HOLSTER

From Stephan K. Homewood, Rt. 2, Box 688, Micanopy, FL 32667, comes this smoker holster. It is crafted from aircraft quality aluminum for a sturdy but lightweight product. The holster can be worn on any belt and will hold any smoker, keeping it at your side while freeing your hands for use. The holster also holds a hive tool and matches. A special safety feature is that it holds the smoker by the bellows, thereby keeping the fire pot away from the body. Mr. Homewood has devoted a great deal of energy and ingenuity in developing this convenience. Please feel free to contact him for purchase information.

Bee Talk

by DR. RICHARD TAYLOR

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I get lots of mail from readers, and I love hearing from them, and responding; but I do have a request. If you want me to answer, please enclose a stamped, self-addressed envelope. Of course, I don't mind buying a stamp, but when I have to do it over and over, then I begin to feel put upon.

This past month I had separate communications from two young readers, boys in their 'teens, both enthusiastic beekeepers, and both wanting my advice on something or other. One of these boys got quite carried away in his letter, telling me of the day he was tending his garden when a great swarm of bees passed overhead, describing his excitement at this, and all his thoughts and feelings.

This, of course, carried me back many decades to my own youth and my introduction to bees, and I was able to relive with this youthful correspondent some of the joys of that stage of life. Even though youth is supposed to be the happy and carefree part of life, it seldom is. Growing up is hard indeed, as one gropes for meaning and purpose and fulfillment, measuring oneself against others and seeking some kind of sense of self-worth, with many frustrations and defeats. But if one is lucky enough, as I was, and as these young letter writers were, to find something totally absorbing, and something that will last, then that person is blessed for a lifetime. Indeed, it is one of my convictions that someone who finds this kind of happiness in his youth will probably never be without it, whereas one who does not, whose growing up is simply a painful transition devoid of warm memories, enters adult life with two strikes already against him. People turn for happiness to the satisfactions of their youth, provided there are any there to be found. If they were loved as children, then they grow up to be loving persons always; and if they were foresaken, then they too become cold and forsaking. If they were blessed with a loving family and in addition have their eyes opened to some aspect of creation that is totally absorbing, whether is be science, literature, nature or whatever, then they are apt to return to those sources of happiness for the rest of their lives.

One of these boys wrote that he had been led to an interest in bees by having first become engrossed in ants. How familiar! Many lifetime beekeepers started out just that way, and I, too, am one of those. As a boy I wanted nothing more than to lie out in the grass on a warm day and watch ants coming and going to their nests. They were like tiny people, with their cities underground. My teachers had not hitherto been able to teach me to read, but I learned that books had been written about ants, and so greedily did I devour these that in no time I could read like anyone else, though I must admit, I read painfully slowly even still. When I was supposed to be doing arithmetic or memorizing passages from poems, I instead had my nose in some book about ants, and my future as any kind of scholar was understandably deemed dismal indeed. That role was reserved for my twin brother, who had no interest in ants, and who was in due time sent off to the famed state university to become a great doctor, while I at the same time enrolled in the nearby college of agriculture, my mother thinking that I could perhaps beome an entomologist.

Of course, it was inevitable that, long before this, I would encounter a hive of bees, and that my life would be transformed forever. It was one of the great moments of my life, to find in the back yard of one of the townsfolk two hives of bees, with bees coming and going, "making honey," as I supposed. I became a beekeeper myself almost overnight, as though heaven itself had suddenly disclosed to me my vocation. My first hive of bees cost me four dollars and a half, complete, and before long I had two. Books and magazines about bees were now consumed as fast as I could lay hands on them. There was, however, one thing I did not learn from books, because I already knew it, and that was how to act around bees. My love for ants and for nature generally had implanted that knowledge in me almost like a natural instinct. I have always felt totally comfortable with my bees, and indeed, much more than this, as if they were my very kin. That is a part of being a beekeeper that cannot really be taught. Buy anyone who is lucky enough to become a keeper of bees in his youth will never need to be taught this. Being with the bees and blending his moods and feelings with them will always be as natural for him as drawing breath.

We all, I suppose, have our natural predilections. For some it will be to music, to others art, or literature, or mechanics, whatever. But I am convinced that the spontanious interests of children should be nourished and encouraged, even when such an interest happens to be in something as unpromising as the common ants at our feet.□

NOTES FROM THE BEEYARD

CONTINUED FROM PAGE 59

can, plus an excellent journalistic ability that makes *SPEEDY* **a fine source of very current and thorough news information.**

Each month we receive copies of various state and regional beekeeping publications. Many of them are the results of careful and caring labor by editors who demonstrate an obvious pride in what they are doing. Several, like *THE MAINE BEE LINE, THE BADGER BEE* **(Wisconsin), and** *THE NEW JERSEY BEEKEPPERS ASSOCIATION NEWS* **are of a quality surpassing most organizational publications of any industry I know of. Beekeepers who do not make an effort to identify and subscribe to their state publication, are missing a great deal of valuable and inexpensive information.**

There are many reasons for subscribing to a beekeeping journal. Basic interest and the enjoyment of reading about bees ranks up near the top. But, from a practical standpoint, the single best reason is that ignorance is expensive. A lack of knowledge invariably ends up costing money because of mistakes. So, in these winter days just before the coming of a new bee season, my message is this: we're proud to have all you folks as readers of *GLEANINGS IN BEE CULTURE* **and, to keep you with us, we'il sure do our best to continue providing you what we believe to be a unique, helpful beekeeping publication -- but why not subscribe to others journals IN ADDITION TO** *GLEANINGS IN BEE CULTURE*? **The cost of subscribing to all three major U.S. bee journals amounts to just about 1 cent a page for a wealth of vital information that is all but guaranteed to save you and make you money many times in excess of the reasonable subscription prices. More is sometimes better, and in the case of reading to become an educated, successful beekeeper, there is no doubt but that is so.**

Testing Your Beekeeping Knowledge

by CLARENCE H. COLLISON
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Beekeepers are very fortunate to have many opportunities to increase their beekeeping knowledge by attending various conferences, meetings, demonstrations, short courses and workshops. National, regional, state and local associations offer a wide variety of educational programs. In addition, there is a wealth of printed materials available on honey bees. It has often been said that more has been written about bees than any other living thing with the exception of man. As I work with beekeepers, I find they are very well read and knowledgeable about their beekeeping endeavors. Therefore, we have decided to initiate a new monthly feature, providing you with an opportunity to test your beekeeping knowledge.

The following 5 questions are true and false. Place a "T" in front of the statement if entirely true and "F" if any part of the statement is incorrect.

1. _____ Apples require cross-pollination and should not be planted in solid blocks of a single variety.

2. _____ A drone reared from a laying worker's egg is sterile.

3. _____ Honey bees are native to North America.

4. _____ Carniolan honey bees are known to propolize excessivly.

5. _____ The presence of larval skins in front of the colony is an indication that the queen is failing.

Multiple Choice Questions

6. _____ Resmethrin is used by the beekeeping industry to: a) remove bees from honey supers, b) prevent American foulbrood, c) protect stored combs from wax moth, d) kill diseased colonies, e) anesthetize the queen during instrumental insemination.

7. _____ The scent or Nassanoff gland is found on the worker's: a) head, b) antennae, c) thorax, d) front leg, e) abdomen.

Please match the following honey bee disease symptoms with the appropriate disease.

A. American Foulbrood

B. Sacbrood

C. European Foulbrood

D. Chalkbrood

E. Nosema

8. _____ hind gut chalky white in color.

9. _____ dead larva strings out or is "ropy".

10. _____ larva dies with a raised head.

11. _____ dead larvae or mummies are often found at the front of the hive.

12. _____ death normally occurs in uncapped cells with the larvae still in the curled stage.

13. Name four useful materials that honey bees forage on their trips away from the hive. For each substance, tell what part of the foragers body would be used to transport these materials.

ANSWERS ON PAGE 111

Siftings

By CHARLES MRAZ
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November, 1983 *GLEANINGS* includes an interesting article on the Braula Coeca mite. It has been around a long time, but very few beekeepers ever see them. Years ago when we produced a lot of comb honey, we had quite a problem with the larvae causing damage to the cappings. Often, the damage occurred after the comb honey was wrapped for sale. I never remember seeing the adult mite on my bees, I just did not look for them. I have seen where the larvae would even work on wax foundation. For some years I have seen no evidence of this Braula mite on what comb honey we still produce.

Some years ago, when working with bees in Columbia, South America, in one apiary I saw an extremely heavy infestation of Braula mites on queens and adult bees. Some of the queens were just covered with them. In most other areas where I inspected the bees in Columbia over a period of a month, I saw almost no Braula mites. I am sure that, at one time or another, they could be found almost everywhere; but in most areas it would take a lot of looking to find any. Apparently, their only damage is to the cappings of comb honey. I found the larvae difficult to kill with fumigants, we just dug them out with toothpicks.

On page 579 of the same issue, Albert G. Bell writes about a "Super Bee Experiment." How Mr. Bell can come to any conclusions on super bees using only one queen of a particular race or strain is hard to understand. He writes of using his six hives and two 4-H member hives -- a total of eight hives -- to test eight different queens, one queen each. Such a test proves little. There are as many variations in queens from the same race and strain from the same breeder as there are between different strains and races of bees. The only way to evaluate any particular strain of "Super Bees" is a minimum of 10 queens of each strain or race being tested to establish an average. With only one queen on test, that one queen could just as well be on the high side or the low side of the average and not be typical of that particular race or strain. The reverse might even prove to be true. These Super Queens must be tried for at least three years before conclusions can be made.

The average production figures can also be misleading. Does one talk about the total honey production of the hive or the surplus production? That can make a tremendous difference. Total honey production is when most of the honey produced in a hive is taken off and winter feed is replaced with sugar syrup. This can make a difference of 50 to 80 pounds "production" to carry a colony through to the next honey crop. Surplus production is when enough honey is left on the hive to carry it to the next honey crop. This is the only real way to measure honey production. I have seen colonies put up 100 pounds of honey in the supers and use it all raising brood before the crop could be taken off. Then they needed another 50 pounds or more syrup to carry them through the winter and spring build-up. Such a colony, even if it had 100 pounds of honey in the supers, actually has a surplus production of minus whatever is needed for winter and spring. This difference, I believe, should be clearly stated when talking about honey production of different races and strains of queens, especially "Super Queens."

Another factor to consider is if they must be fed nosema drugs twice a year to prevent winter and spring mortality. That is another deduction from the honey crop. There are many other factors that enter into evaluating Super Queens. It is not production alone, but also what does such production cost with additional feed, disease control, swarm control, extra build-up feeding of pollen, if they come through winter strong or weak, etc.

A Super Bee is a very ellusive creature. One year they may be Super and the the next year they may be worthless. To maintain a race of Super Bees is a difficult, if not impossible, task. We cannot judge Super Bees by any individual queen -- they just don't live long enough. The whole strain must be judged by the average performance of many queens, certainly not less than 10, but even better, several hundred over a period of years.

In any case, I wish Mr. Bell the best of luck in his search for the Super Bee. When he finds it, I hope he'll let us know. I've been looking for and trying to breed one for 65 years. I haven't found one yet. In fact, in general, the bees we had 50 years ago are better than most of the bees we have tody.

One of the most important articles to come out of *GLEANINGS* in a long time is "The Disinfecting and Healing Properties of Honey," by Dr. T.M. Dobrovsky, on page 648 of the December issue. It is an article that every beekeeper should read if he or she has an interest in honey. It is one of the best articles I've seen on the subject and, from personal experience, I have seen the same results over many years in the U.S. and foreign countries.

I knew and worked with Dr. Beck, author of "Honey and Your Health" (1937), and Dr. D.C. Jarvis, author of "Folk Medicine" (1972). The latter was on the Times best seller list for some 2½ years and sold more than 3 million copies. It also was a best seller in Japan. In both these countries honey sales increased as a result of the book.

The only way we beekeepers can ever expect to see a new increase in honey sales is to prove and publicize the fact that honey is really a superior health food.
Many beekeepers blame the present glut in the honey market today because of so much imported honey. There is no question imported honey has increased our surplus of honey, but the real problem is a big drop in the consumption of honey. It may be partly due to an economic slump, but the real reason for the drop is the great deal of adverse publicity we have been getting. That is unwarranted. If honey has remarkable anaseptic and healing power externally in topical application to wounds, sores, etc., it is reasonable to assume the theraputic properties would be equally good internally. We should have articles like that of Dr. Dubrovsky's reprinted for distribution to our honey customers and the public, so they can see for themselves how much they can benefit in health by the use of good, natural honey in the diet.

We certainly do not know everything there is to know about honey, nor can we expect to see much, if any, research carried out by "Organized research institutions." There is no money for such research. Any research on honey is likely to be done by beekeepers. We are the ones who will profit by it and so we will be the ones to pay for it. In the meantime, every beekeeper interested in honey can do their own research. We all get cut, bruised and sore. Try honey for these problems.

If you have high blood pressure, try cutting out all sugar in the diet except for the

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MICRO COMPUTERS FOR BEEKEEPERS

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It seems like every day we hear more and more about computers. The terminology surrounding them almost becomes a new language. There are PC's, micro's, mini's, and home computers -- but what do we really need to know in order to purchase a computer or, better yet, how to use one? Like any 'new' thing there has developed a certain jargon. I suspect this langage barrier is not much different from when TV first appeared, except that we probably will be more directly involved with computers than with a T.V. With a computer you have to do more than just turn it on!

What will a micro computer do for a beekeeper? They won't manage your bee colonies. However, they will do many things faster, better and more accurately. There are programs for inventory, tax preparation and tax records; word processing, data filing and sorting, budgeting, addresses and address labels, and much more. There are more than 4,000 commercially available programs for the Apple computer alone. IBM and TRS-80 computers are not far behind. To my knowledge there are no programs specifically for the beekeeper on the market, although most business or farm programs would be directly applicable or could be modified for use by beekeepers. Some of the business management routines could be used to schedule beekeeping operations.

What is a computer or a micro computer? In its simplest terms, a computer is a high speed memory machine. Memory is recorded in the form of magnetic images either on tape, discs or within the 'hardware' chips of the computer. These images are recorded as magnetic 'flip/flops', or, in computer terms, are usually stated as 1 or 0. What the computer really does is make sense of these 1's and 0's by putting them into a language we can understand. Conversely, when we 'talk' to the computer, there are 'systems' that put our English (or mathematical) instructions into the 1's and 0's that the computer understands. To be more specific, the 1's or 0's are called bits (equals binary digit) and it takes eight of this bits to make a byte. A byte makes up a character or symbol that we can easily read. For example, the letter 'A' has a specific sequence of bits (one byte) that is unique from all the other characters, even the lower case 'a'.

There are a number of terms or definitions that are used in computers and I will try to give some of the more common ones. Like in any subject area, a language has developed and to be fluent, or even to understand computers, you will have to become familiar with some of these terms.

HARDWARE -- This is the computer itself. It could also include parts of the other connected devices such as the monitor or tape drives, etc. Usually, they are called by the term 'peripherals' to distinguish them from the computer itself.

SOFTWARE -- These are actual 'programs' or instructions for the computer's operating system. The programs are written in 'languages' that are rather specific in syntax. The reason for this specificity is that the computer would have to store a very large dictionary or vocabulary, in order to use a diversity of terms. These languages usually have names like BASIC, FORTRAN, PASCAL, etc., and while they are all similar, using them requires precise terms and sequences. Each langauge has its advantages and disadvantages. While larger computers often can handle several languages, the small micros usually can operate on only one. Because of the way the language is read (or interpreted), BASIC is generally the one that is used because it takes less memory, and micros generally have small memories. Programs (software) can be changed into, or written, in machine language (the 1's and 0's). Programs written in machine language will execute the instructions at a faster rate since the computer operating system does not have to take the 'English' instructions and change them.

ROM --Stands for Read Only Memory. These are built-in memory chips that contain instructions to operate the computer and read the programs. When you turn on the computer these instructions are read to set up the computer for your instructions and programs. Sometimes this ROM is called firmware because it is put into the computer memory by the firm.

RAM -- This is Random Access Memory, and differs from ROM in that it is erasable. This is the memory that is used by the programs that you enter into the machine. The program can be anything from a game to instructions for your income tax preparation. After the computer is used for one program, for example, a game by your children, you can use the same memory for the tax preparation at a later time.

Generally, the memory of a computer is given as a measure of its ability to handle programs or store data. The '64k' or similar notation is the size of this RAM memory. In this case, the computer would have approximately 64,000 memory locations. If a program was written for a 64k machine it would probably not work on a 32k computer. However, a program will normally work in the other direction.

CP/M; APPLESOFT; etc. -- These are the operating systems of certain manufacturers. If a program is written for a CP/M operating system, it should work on any computer with that type of operating system. Many software companies write their programs to work on all the common computers. Each program is modified or directed to a specific machine or operating system. For example, a tax program may be written for either an IBM or the Apple. However, even though it is the same program written by the same software company, a version written for one machine usually won't work on the other.

DISK DRIVES -- The most common drives now on the market are the floppy disc drives. These devices spin a somewhat encased, flexible disk while a movable head reads or writes magnetic bits off of, or onto, its surface. By spinning at a relatively fast speed, the head is able to read or write the information at a remarkable rate. Because it can read the disc at any spot at essentially the same time, the data is termed 'random' though its storage is highly structured. This differs from a cassette tape that stores magnetic bits, too, but in a sequential way. Because the tape has to physically move past the first information to get at 'bits' at the end of the tape, it takes longer to store or retrieve programs stored on tape. The slow access of data from cassettes limits their usefulness when using large programs or information systems.

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Hard disc drives are also available. These drives usually operate (spin) continuously while the computer is turned on. (A floppy disc drive only spins while data is being transferred.) Hard discs have the advantage of spinning faster, and continuously, and the information can be retreived faster. Because they are capable of holding more information, they are useful in large data management systems.

DOS -- Is the acronym for Disc Operatons System. It might have a prefix like MS-DOS or APPLE-DOS, which are the disc operating systems written for specific micro computers or by specific software companies.

PROGRAMS -- Programs are a set of instructions for the computer. A program could be a few lines long or hundreds of pages. Most of the good programs written have taken much thought and effort. Anyone can learn to write programs, though they may be rather simple ones at first. Most people that use, or will use, computers don't know how to write programs. The rapid growth of the micro computer market has been because good programs are purchased on discs or tapes and the information is put into the computer for the user to operate. One thing to remember is that programs (or computers) are not just push-the-buttons-and-out-comes-the-information machines. Rather, the user has to put in the data for the program to operate. Using the tax program, for an example, still requires you to enter the figures. A good tax program will ask for (prompt) the figures and thus really aid in the preparation of the form. The purchase price for these programs depend, to a great extent, on the time it took to write the program as well as its marketplace value (competition). Programs can cost as little as a few dollars up to several hundred. As with most things, you generally get what you pay for. The competition is already making the software companies write better and easier to use programs with more on-screen help, instead of looking up instructions in a manual. One thing to remember is that more can be spent on software than on the hardware. This is especially true if several programs are needed. The purchase of some of the additional programs can be spread out over time and thus defer this expense.

What kind of system should a beekeeper buy? The best rule seems to be to look at the software first -- then buy the hardware that fits the programs needed. The number of available programs now and in the future should also be considered.

The basic computer doesn't do much without peripherals. A monitor is needed or a connection to a T.V. I am not too much impressed with the need for a color monitor until I see the day when I can have a color printer, too. This brings up the point that, if a computer is to be used for records, a printer will be needed. A printer doesn't have to be fancy unless letter quality printing is required. With the word processing programs, the computer becomes a typewriter of high quality. A disc drive (the computer is much faster with two drives) is very useful. A cassette player/recorder will work but you may lose patience when you try to use large programs or if you have large amounts of data to be saved. Because the price of disc drives has dropped, I consider the purchase 'essential'. Cassettes, basically, will not work with most data management programs.

Are computers money saving? That is not always easy to answer in a general way. However, if keeping good records, and being able to sort a bee yard's production from year to year, or from stock to stock, are money savers, then micro computers might save you money. Certainly they will make what you do better and more accurate. Computers will help you use and retrieve more information. The question then becomes: "Do I need more (better) information? To help make the decision easier, remember you can take an investment tax credit for the first year, and also depreciate the system for tax purposes.

Charles Mraz: Bee Venom King of America

A peek at the Middlebury, Vermont apiarist responsible for the promotion and acceptance of bee venom therapy

By J. IANNUZZI
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The Beginnings

Mention bee venom therapy to any knowledgeable beekeeper or medicine man and the name, Charles Mraz, Box 127, Middlebury, VT 05753, springs to mind. The owner of the Champlain Apiaires, "Charlie" (as his friends call him) was stung with an interest in bees at the age of 14 after watching his neighbor's bees go about their daily tasks at Woodside, Long Island, New York where he was born on July 26, 1905, the same day but not year, as his present spouse. Today he is known as one of New England's largest commercial beeman with a thousand colonies. His father, who worked on transmission belting, did not dabble with nectar collectors nor does any of his family—two boys by his first wife, Charles 51 and William 46 and three girls by his second, Margaret—Canadian-born in 1920—Michell 20, Laurie 21 and Marna 24.

His venom producers

His stock is principally from "the peninsual of individualists," as Marconi called his native land. His method of increase is that used by many astute apiarists and recommended by Dr. Michael Burgett of the University of Oregon at Corvallis: making divided colonies rear their own regal ladies. The "Mraz" queenbee, which he started in Vermont in 1930, are raised from his breeding stock—which also has been sent to Mexico on several occassions—and is currently advertised in apian publications through queen breeders in North Carolina (Clear Run Apiaries—Amos McLamb, P.O. Box 27, Harrells, 28444) and Mississippi (Wildwood Apiaries, Box 261, Starkville 39759) and sell for $7.25 a piece postpaid (1982 price). In a feeble effort to differentiate the Mraz queen from others sold under specific names, the author asked the New York native several years ago the pertinent question at an Eastern Apicultural Society (EAS) meeting, only to receive the quick reply: "Why don't you try one?" Despite the unfavorable publicity in a recent study of six commercial honeybee queens (*American Bee Journal,* April 1982) commenting on the alleged aggressiveness of his stock, the New Englander responded swiftly in the November issue of the same magazine: "This rather surprised me as I work with our bees all summer, usually no veil, glvoes or shirt. All I wear working with our bees is trousers and shoes [utilizing] a smoker," as the accompanying photo in the article aptly showed.

Charles Mraz at Apimondia, Acapulco, 1981 with admirer Irene B. Iannuzzi, R.N., Ellicott City, MD.

His travels

Mr. Mraz doesn't spend all his waking moments working with the pollen pilferers. He does vacation. For example, the writer first met him at the 1978 EAS annual meeting in Wooster, Ohio, chaired by the EAS President John Root, and has since bumped intohim at each succeeding EAS get-together: Ottawa, 1979, Vermont, 1980, New Jersey, 1981 and West Virginia, 1982, having attended his very first—and every one thereafter—shortly after the birth of EAS/at the University of Maryland, College Park, where it was fathered by that late GIANT in apiclture, George Jenvey Abrams (+ 1965), the university extension agent. Nor does he restrict himself to a provincial setting since the writer crossed the path of the youngish-looking 77-year-old in Acapulco, 1981, when both attended the world congress of beekeeper organizations—Apimondia, of which his first such meeting was in 1967 at the EAS birthplace, with his next in Moscow in 1971. The world assembly in "amigo country" was a homecoming in a sense because, for more than two decades, he has been working bees there all over—Veracruz, Atlixco, Cuernavaca, Puebla, the Yucatan, Morales, Nuevo Leon, Monterrrey, Allende and other spots. (He has also worked with these industrious little ladies in Soviet Georgia, Rumania and Colombia, where he served as a consultant.)

Bee venom therapy (BVT)

The commercial beekeeper (since 1925) pioneered the use of toxin from *Apis mellifera* for the therapeutic purposes, starting with himself at the age of 29 in 1934 when he contracted arthritis in his hands and legs, tried bee stings at the appropriate spots and found himself miraculously "cured." This led to the technique of collecting pure bee venom, which he perfected and which he has been doing for 30 years. He sells primarily to scientists, for experimental purposes, thus prying open the doors for medical research. Bee punctures might be called his second love; clients from all over the country come knocking on his door for treatment of arthritis after exhausting or becoming disillusioned with "modern" medical treatment. With the connivance of medial doctor friends, he has been doing it for "44 years," according to his own admission in 1978, on a no-fee basis. With no formal medical training and chemistry limited to what "I learned in high school," the man from Vermont has a flourishing fee-free service (practicing medicine used to be a constant worry)—but donations, if any, are cheerfully accepted.

No disparager of professional medicine, the progenitor of the Mraz queen swears by BVT for most all cases of arthritis (Grek for *swollen joints*) BEFORE bone and joint deterioration has set in. His basic philosophy: After a patient has visited um-

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teen physicians for so many years, what has he to lose through the sting of Ms. Honeybee?

Inherent in what he preaches is that bee farmers never get arthritis; however, several of his afflicted listeners at one EAS lecture, who had volunteered for his demonstration (see photo), had been stung multiple times. His defense is that the poisonous puncture must be applied to the joint affected (local therapy), not to any random place in the body (systemic). Nor, he maintains, does treatment consist of merely a single sting in one day; four or five daily, covering several weeks in order to build up and maintain immunity, may be necessary. Nor does it, he constantly repeats, work on all types of swollen joints.

What precisely is his procedure for treatment? According to one lecture demonstration, he isolates the painful areas by touch and marks them (he was using a ballpoint pen once). Next from a bottle he extracts a lady bee with tweezers and applies her to the marked spots. This is repeated as often as is necessary, with care being taken to see that the subject, if never before insect punctured, does not go into anaphylactic shock (shortness of breath, red spots all over the body, swelling, difficulty in swallowing)—but most of such cases can be instantly combated with antihistamine, he adds.

The case of Betsy Coyne

A registered nurse from Sussex County, New Jersey, Betsy Coyne first discussed her arthritic condition with the Bee Venom King at EAS, Burlington, Vermont 1980 where he was on the program discussing his favorite topic. She was reluctant to follow his advice. Her right knee became progressively worse despite a visit to the physician every six weeks. Forced to quit her hospital employment, she finally had to resort to a cane. An exploratory operation in August of the next year revealed "degenerative arthritis" in that knee. Treatment called for therapy to restore muscle and cartilate deterioration plus medication for pain-six pills daily. 'You'll have to live with it for the rest of your life,' she was advised.

Recalling the Mraz recommendation for activating the body's "trigger" point first and then the immediate area, she began treating herself in September 1981, puncturing herself every three days for eight weeks. "Within one month after starting BTV treatment," according to the account in the New Jersey Beekeepers March 1982 newsletter, "she was bending her knee a lot easier, walking much better, and return-

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ed to her hospital job part-time. Betsy stated that you could not give yourself only one bee sting: it was not enough. One had to do it on a regular basis to keep up the immunity in the system. She continues to give herself a maintenance dose—a bee sting once weekly—and is now tring to extend the time between stings. After receiving the seven-day dose, her leg will feel better, but is sore for about a day."

The man who began managing pollen collectors in 1919 points out that the human body has two central trigger points: one, near the back of the neck, governs the upper torso from that area to the waist; the other, located in the lower back section controls the span between the waist and the toes. The trigger point treated depends upon the the location of the pain.

How does the toxin from the honeybee actually work? According to accepted scientific studies, the insect poison increases the flow of natural cortisone in the body, thereby making the application of the synthetic stuff unnecessary.

Acceptance by the medical profession which has been generally scornful of this "folk medicine" treatment has been slow in developing. Finally in 1978 a nationwide television program spotlighted BVT with a few minutes devoted to the promoter from Middlebury and the experiments being conducted on the treatment of swollen joints through this "new" method which Mr. Mraz had been using since the middle 30's!

The Long Island native does not believe in relaxing on his laurels. I heard him deliver a paper on apiotherapy—medicine from the hive with the focus on bee venom—at Apimondia, Acapulco 1981 and, I understand, he did the same thing in Moscow ten years previously. It was partly through his impetus that the North American Apiotherapy Society, which held its fifth annual meeting in the Baltimore-Washington metropolitan area on November 13, 1982, was founded. (The first time that I ever met him he was lecturing on his favorite theme.) Actually he is no stranger to those who have not seen him in person, as I have, since he has authored a monthly column called "Siftings" in *Gleanings In Bee Culture* for many years.

Commercial beekeeper, author, lecturer, Bee Venom King—that's septuagenarian Charles Mraz from The Green Mountain State!□

Wintering The Honey Bee Colony: Hives Part II

By T.S.K. JOHANSSON and M.P. JOHANSSON
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Value of Double-walled Hives

The additional protection of a double wall against wind is apparently minimal, and it is better to use a single-walled hive in a good, sheltered site. R. Colvin, associate of L.L. Langstroth, settled the question of the value of thickness of boards by placing large populous colonies in hives consisting of 1/8", 1/4", and 1" boards. In the spring they were all in equally good condition. Six less populous colonies in hives of thick lumber perished during a period of very severe cold weather[14]. Finnish beekeepers at the 1977 Apimondia Symposium on "Beekeeping in cold climate zones" came to the same conclusion: "the thickness of hive walls is not significant, but colony strength is". Although the Apimondia Symposium died not reslove the question whether sing or double-walled hives are superior, some opinions were aired. In Poland there was no significant difference in average temperature of the cluster, mortality of bees, amount of brood, or honey produced compared to single-walled hives. The colonies in single-walled hives did use two pounds more honey during severe winters. Double-walled hives are being phased out since they require 60% more wood to construct, and are therefore more expensive and heavier to move during migration. Swedish research found no significant advantages with double-walled hives although two colonies in single-walled hives did before they could be fed[15].

Hive Size

Of the hundreds of hives devised during the past century, very few found acceptance on any large scale. The New Hive introduced by J. Heddon in 1885 was an exception because it was aggressively promoted, and met the need for a cheap hive. Heddon divided the Langstroth depth hive into two 5¾" deep brood chambers with 5 3/4" deep frames. This is now the shallow super listed in current catalogs. Heddon derived these dimensions by computing that eight of these frames were equal in volume to the five frames he was using in an 8-frame Langstroth hive, with contractors (dummies or follower boards) along the sides (the contraction system).

The brood-chambers were to be reversed at intervals to increase the production of brood, and keep brood close to the honey supers above the honey board. A queen excluding honeyboard placed under the lower brood-chamber prevented the queen from leaving with a swarm. However, the reversible feature of the divisible brood-chamber was extolled as an almost sure preventive of any desire to swarm. Such manipulation might seem to be a portent of Demaree's technique of swarm control, but he had already published his use of a "new hive" in which to place the queen and most of the brood. He proposed saving the expense of a separate hive by using a second bottom board instead of moving the brood to second hive stand[16].

In 1888 Langstroth spent a month at Heddon's home and apiary to evaluate his New Hive. Langstroth's complimentary report was inlcuded in Heddon's price list along with 16 pages of enthusiastic testimonials by beekeepers[17]. A sample hive and rights to construct it cost only $3.50 for individuals, and $25 for exclusive rights to an entire county (5 for $100). Langstroth said this was not price at all; he had refused $1,000 for the rights to his patent in **one** county in New York state. With such endorsements, the demand for small hives escalated. In 1889, the Root Company offered an 8-frame dovetailed hive, and also took over the small hive which they had manufactured for F. Danzenbaker since 1895[18].

There were reservations about the Heddon hive for safe wintering: one brood case might be too shallow; with two brood chambers the top and bottom bars of the frames in the center might be objectionable? Heddon (and recently R.W. Moody) considered the central passageway an advantage in permitting the colony lateral movement to reach new stores[19].

The common hive on U.S. farms in the late 1800's was square with deep frames; good for a "let alone system of beekeeping". The shift to shallower hives was blamed by some for the winter losses of 25% of that were considered minimal[20]. C. Dadant tested many new hives in his apiary, and by 1868 concluded that small hives provided insufficient space for the queen to lay eggs, or for storing honey and pollen. He constructed a hive with 16 frames of the deep Quinby depth and considered it ideal since they were more nearly the depth of natural combs, and provided more space for stores above the cluster[21].

An order by A.N. Draper in 1899 for Quinby depth frames in a deeper Langstroth hive resulted in what was dubbed "Draper's Barns", but it was later offered by the Root Company as the 10-frame Jumbo hive. When Pellet orderd 75 Langstroth length hives with the Quinby depth frames from Dadant's, this culminated in the production of the modified Dadant hive in 1920 using eleven frames.

When E.F. Phillips recommended that the Soviet Union "scrap" their Dadant-Blatt hives for 2-story Langstroth hives, the Dadant's reply was swift and pointed[22]. It is interesting that at least one beekeeper considered a 2-story hive too large for wintering unless the upper story was placed above an inner cover to avoid robbing by other colonies in the spring; a common occurance. The colony got its food a little at a time through the small entrance into the upper food chamber[23]. The possibility of adding a whole super of honey without feeding was considered an advantage of 2-stories. That smaller hive bodies can be lifted more easily is an important consideration for beekeepers with hundreds of hives to manipulate, and some even prefer the 8-frame rather than 10-frame for that reason[24].

Wintering bees outdoors in a single hive body is very risky even with the present larger hives. The restricted space limits brood rearing and honey storage in the fall, and there is no explosion space when the colony takes off in the spring. Even though 2-story hives are better than single story hives, for minimum risk of failure a 3-story hive with 10 Langstroth depth frames, or equivalent, is strongly recommended[25]. Square 12-frame hives may be ideal if they provide better lateral movement, and natural nests approximate a cube[26].

Winter losses were three times as great with 8-frame compared to 12-frame hives[27], and larger single brood chambers were better for wintering[28]. Restricting colonies to a single hive body resulted in a reduction in the size of the colony, but brood area in May was not affected unless the wintering space was excessive for the strength of the colony[29].

It might seem a review of the pros and cons of various sizes of hives would be purely academic, but even as these lines are being written there was a suggestion to reawaken the 60 year old controversy over the use of the Quinby depth hive body. Ekwell in Sweden thought this larger hive was in common use in North America,

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and advantageous because when used as a single brood chamber it held more surplus and required less insulation. Beekeepers have long recognized that honey surrounding the cluster is an excellent heat trap, and wider hive bodies would be more effective[30].

Jumbo hives are common in Mexico, but uncommon in the United States and Canada. To overcome the disadvantages of the greater weight of a larger hive, the Dyment brothers of Smithville, Ontario designed their operation so they do not lift anything heavier than a single frame at any one time. They also selected for a queen whose workers tended to store honey in the brood chamber[31]. The authors do not use queen excluders, and during the summer there are colonies that use the middle combs from the top down for brood; placing honey on either side. At the close of the summer they place honey in the uppermost brood combs as bees emerge. The lower brood chambers that are left on the stand have considerable honey along the sides for winter. Other colonies systematically fill the combs across the entire top hive body with honey first, and then the second hive body, etc.; leaving the brood chamber virtually free of honey except for some arches in the corners above the brood.

Taber and Owens used large frames $18^{7}/_{8}$" square, and others $15^{3}/_{8} \times 17^{5}/_{8}$". Fourteen of the larger frames were equivalent to 3.79 deep Langstroth hive bodies; 12 of the smaller frames were equivalent to 2.64 Langstroth hive bodies. They were reversible for swarm control, and designed to be manipulated with mechanical assistance. the 160 liter cuboidal hive Lupanov based on measurements of natural nests is very nearly equal to the larger of Taber and Owen's hives. Boardman considered the cuboidal hive the perfect form[32].

Langstroth advised that, "In all districts where fall honey cannot be counted on it is of great importance to have the extracting frame of the same size as that of the brood hive"[33]. Whether following Langstroth's advice or not, in Ohio the use of $9^{5}/_{8}$" deep hives for brood boides, and $5^{11}/_{16}$" shallows for honey supers is being replaced by the $6^{5}/_{8}$" medium hive bodies for both brood and honey[34].

Materials

Columella (60 A.D.) prescribed that hives be made of whatever materials were available to the beekeeper such as cork, reeds, bamboo stems, earthenware, etc. What a hive is made of is irrelevant to the essential protection it affords from weather and enemies? *A. dorsate* normally builds one comb on the underside of a branch, but if it uses a rock crevice it may build a second comb. With bees released from the chore of protecting the comb against the elements, birds, wasps, etc., the colony can invest the conserved energy in constructing a parallel comb[35]. A swarm that occupied an overturned splint peach basket survived a northern Illinois winter when other colonies in frame hives died. A paper hive with sides and bottom pressed in one piece, and using metal frames was patented[36].

The original hive in Europe was a conical basket provided with straw hackle in the winter. Skeps made from ropes of grass or straw originated in Germany where they are still used on the Luneburger heath (moors), as well as in Holland. The use of skeps spread markedly during the middle ages, as they were the easiest way of keeping bees.

There has long been a prejudice in favor of straw for bee hives as being cool in the summer and warm in the winter (Langstroth). Lavie foudn that the temperature of a colony in a straw hive did not vary as much as the temperatures of colonies kept in wooden movable-comb hives[37]. Hives of straw with movable frames are still used in Eastern Europe[38].

In 1943 D. Whelan fantasized about hives of plastic since so much else was being made of it. He especially wondered about the possibility of colors, and whether each beekeeper could patent the use of a combination for his hives. In 1974 Schultz Apiary did offer plastic beehives in white, black, or in color combinations on special order. Although the hive parts are cast molded and do not require assembling, the can be worked like wood. It is the ideal material for wintering bees as it absorbs only 2% of the moisture, does not decay, and is not attacked by termites. Strips of wood placed under the rear edge of the cover permits condensation to escape.

A Finnish plastic hive is used for overwintering only, and it has a porous mat over the bees with screened openings in the cover to vent the moisture. Foam polystyrene is used to cover wooden hives, fill double-walled hives, and as a layer in covers where birds cannot peck holes, and bees cannot reach it to gnaw the surface.

Plastic conserves heat internally, but it also resists the transmission of warmth from the outside as when the sun shines on cold days. Large flight holes may be needed in summer to prevent overheating[39].

In 1879 C.N. Abbott suggested that one side of double-walled hives be made of glass so the sun could warm up the combs to permit the bees to move to stores. In summer the glass side of the hive body would be turned away from the sun. The idea was reintroduced by Wedmore 53 years later. Solar gain (the greenhouse effect) occurs because low frequency waves penetrating the glass from the outside are trapped, and do not return. Walton in southern England placed panels of glass on the outside of the hives, and such stocks were stronger. In the U.S.S.R. colonies wrapped in polyethylene sheets showed significant increases in honey production. Sheets of corrugated plastic are now promoted "to build" a solar house around your bee hive during the winter months"[40].

Best Hive

Wadey observed that natural nests usually consisted of five combs, but often only three or at most nine combs. One colony had combs six feet long, and the combs are often built diagonally to the entrance. He suggested the ideal hive, from the bees' point of view, would be 4'6" high, and 1'6" wide with 4-5 combs. That width is only 4" more than the 12-14 diameter of nest cavities that Lupanov observed in trees (with 6" thick walls). The nearest approximation to such hives were the Russian log hives still in use in 1951, averaging 65-130 pounds of surplus honey in addition to winter stores.

Double-walled Polish hives with eight Langstroth sized frames standing on end, contained a 4-5" space below the frames for clustering in the winter (the hives were placed in cellars). Combs of capped honey built below the frames during the honey flow were cut out by the beekeeper. The "bee closet" used by a beekeeper in Massachusetts provided a shelf for a box hive brood chamber, and a deep space underneath the shelf for surplus combs. The angular arrangement of combs in a hive box hive or skep may make for more successful wintering? The cells for honey are deeper at the top and ends of the combs, and thinner in the center where the cluster is located, and brood rearing begins in January.

Box and skep hives are not unprofitable as skeppists in Northern Germany can document. Their beekeeping traditions include a cost conscious frugality; expensive equipment is for those who can afford to keep bees for amusement. Skeps are not as primitive as we might think, and a recent article suggests that the ability to remove the entire nest made the harvesting of honey combs an efficient procedure, and possibly the precursor to movable bars. Heddon considered an advantage of his hive was the possibility of manipulating it as a unit, rather than frame by frame. Cylindrical hives of bark still being used in

CONTINUED ON NEXT PAGE

Africa produce wax on a scale that influences the world price of beeswax.

Gravenhorst's article describing the German skeppists produced a surprising response by Langstroth. As the inventor of a practical movable-frame hive, he felt it his public duty to suggest that most farmers would have been more successful with their bees if they had stayed with the old straw or box hives: "A simple tool in the hands of one who knows how to use it will turn out much better work than an imporved implement whose proper use has never been learned". He believed the movable-frame hives were an injury to the mass of farmers who tried to use them, without first learning how to use them; a situation that remains to some extent today? Langstroth would have reason to feel sadness that colonies are still being permitted to starve to death during the winter for lack of sufficient stores. As then, beekeepers remove honey supers without first making certain the bees have sufficient stores in the brood chambers below the queen excluder[41].

Objective data on which to base the design of an ideal hive for wintering are scarce, but apparently hives contribute little benefit to bees other than to provide a cavity protected from the weather in which to rear their brood. If the beekeeper knows enough to not interfere with their programmed behavior, most hives can be adapted to that purpose.□

References

14. *CLARK, K.K. 1951 Beekeeping. Harmondsworth, England: Penguin Books.*

COLVIN, R. 1863 Report of the Commissioner of Agriculture for 1863. Washington, D.C.: U.S. Dept. Agric.

CRANE, J.E. 1928 The double-walled hive for winter. Am. Bee J. 68(10):489-490.

15. *BORNUS, L.; JABLONSKI, M. 1968 [The effect of wintering bees in single-walled hives.] Pszczel. Zesz. nauk 12(3):85-98. In Polish.*

FRIES, I. 1980 [Bee research in Ultuna 1979.] Bitidningen 79(1):11-16. In Swedish.

16. *DEMAREE, G.W. 1884 Controlling increase, etc. Am. Bee J. 20(39):619-620.*

HEDDON, J. [1885] Success in bee-culture, as practiced and advised by James Heddon. Dowagiac, Michigan: Dowagiac Times.

—1890 Heddon's net price list of useful implements for beekeepers. The new hive and system. Heddon's catalogue for 1890. Dowagiac, Mich.: The Author.

17. *LANGSTROTH, L.L. 1888 Manipulation. Am. Bee J. 24(18):294-295.*

18. *PELLET, F.C. 1938 History of American beekeeping. Amex, Iowa: Collegiate Press, Inc.*

19. *CANADIAN BEEKEEPING 1980 Comment. Canad. Beekeep. 9(1):2.*

20. *AMERICAN BEE JOURNAL 1933 Editorial: Good winter for bees. Am. Bee J. 73(2):47.*

—1934 Editorial: Deep combs for wintering. Am. Bee J. 74(1):11.

HAMBLETON, J.I. n.d. Putting the bees to bed. National Broadcasting Company Radio Talk.

21. *AMERICAN BEE JOURNAL 1934 Editorial: Winter losses. Am. Bee J. 74(6):254.*

GLEANINGS IN BEE CULTURE 1875 Heads of grain, from different fields. Glean. Bee Cult. 3(3):33-36.

RAYKOVSKY, V. 1934 A Russian's comment on Langstroth and Dadant hives. Am. Bee J. 74(5):206-207.

22. *AMERICAN BEE JOURNAL 1933 Editorial: "Scrap" the deep comb hives? Am. Bee J. 73(10):382.*

23. *STURDEVANT, J.H. 1933 I find too much room in 2-story hives for wintering. Am. Bee J. 73(3):94.*

24. *PELLETT, F.C. 1932 The postscript. Am. Bee J. 72(10):422; (11):548.*

25. *FARRAR, C.L. 1952 Ecological studies on overwintered honey bee colonies, J. Econ. Ent. 45(3):445-449; 1968 Bee-Wise 22(1):2-5.*

SIMPSON J. 1969 The amounts of hive-space needed by colonies of European Apis mellifera. J. Apic. Res. 8(1):3-7.

26. *HOLZBERLEIN, J. 1966 Wintering honey producing colonies in the north. Bee-Wise 21(2):3-8.*

QUINDRY, L.A. 1969 A modern bee hive. Ill. State Beekeepers' Assoc. Bull. 51(5):[3].

TABER, S.; OWENS, C.D. 1970 colony founding and initial nest design of honeybees, Apis mellifera L. Animal Behaviour 18(4):625-632.

27. *GANAEV, A.I. 1959 [Wintering bees in restricted and extended brood chambers.] Pchelovodstvo 36(12):8-10. In Russian.*

28. *EKWALL, A. 1954 [Do we also need a hvie with a larger brood chamber?] Nord. Bitidskr. 6:19-23; 39-52. In Swedish.*

29. *MARTINOVS, A. 1972. [Experiments on wintering colonies in a double brood chamber.] Nord. Bitidskr. 23(1):13-19. In Swedish.*

VILLUMSTAD, E. 1975 [Effect of restricted hive space during wintering and spring development], Birokteren 91(5):73-78. In Norwegian.

30. *CANADIAN BEEKEEPING 1974 Standard supers. Canad. Beekeep. 4(10):79.*

CONNOR, L. 1982 William Lyman — Wild raspberry honey specialist. Speedy Bee 11(4):NE4.

IANNUZZI, J. 1983 Experimenting with jumbo frames without the use of jumbo hives. Glean. Bee Cult. 111(10):542.

THURBER, P.F. 1982 Let's hear it for Jumbos. Speedy Bee 11(7):21.

31. *DYMENT BROS., Smithville, Ontario. 1971 Personal communication.*

32. *BOARDMAN, H.R. 1895 The old-straw-hive. Glean. Bee Cult. 23(7):250-252.*

LUPANOV, M.V. 1974 [An old beekeeper's advice.] Leningrad, USSR; Lenizdat. In Russian.

TABER, S.: OWENS, C.D. 1974 Two designs of single unit brod nest hives for efficient colony management. Glean. Bee Cult. 102(1):20-22.

33. *LANGSTROTH, L.L. 1885 Journal. November 4, 1885.*

34. *SOUTHWESTERN OHIO HIVE PARTS CO. 1978 Price List.*

35. *CHESHIRE, F.R. 1888 Bees and bee-keeping. London: L. Upcott Gill.*

36. *AMERICAN BEE JOURNAL. 1941 Honey in a peach basket. Am. Bee J. 81(9):418.*

COTTON, W.C. 1842 My be book. London: J.G. & J. Rivington.

FRAXER, P. 1885 Paper hives and metal frames. Canad. Bee J. 1:286.

GLEANINGS IN BEE CULTURE. 1912 Bee closet. Glean. Bee Cult. 40(19):625-626.

GRAVENHORST, C.J.H. 1892 Bee-keeping after the old fashion in Germany. Glean. Bee Cult. 20(10):361-362; (11):416-418.

HAMMER, O. 1950 [Beekeeping in skeps on Romo.] Nat. Verd. Kbh. 34:203-211. In Danish.

HERMAN, E. 1951 [Log hives in White Russia.] Dtsch. Bienenw. 2(10):206-208. In German.

IFANTIDIS, M.D. 1983 The movable-nest hive: A possible forerunner to the movable-comb hive. Bee World 64(2):79-87.

LANGSTROTH, L.L. 1892 Bees and hives for the farmer. Glean. Bee Cult. 20(14):537-538.

SANDERS, H.W. 1934 A clustering place for winter. Am. Bee J. 74(10):455-456.

WADEY, H.J. 1948 Section de chaufee? Bee World 29(2):11.

37. *LAVIE, P. 1954 Continuous temperature records of honeybee colonies in witner. Insectes sociaux 1(1):39-48. In French.*

38. *CLARKE, W.F. 1881. The straw hive of the future. Am. Bee J. 17(21):162-163.*

—1983 Anonymous (The Editor) 1983 Apimondia Congress, Budapest, Hungary. The Apiarist (New Zealand) No. 34:1-2.

GOETZE, G. 1948 Der Siedlerbienenstand. Berlin-Charlottenburg 4: Siebensicher Verlag.

GREINER, F. 1904 Has the straw hive a future in America. Glean. Bee Cult. 32(13):648-650.

HENCHEN, W. 1868 Straw movable comb hive. Am. Bee J. 4(2):38.

39. *ROSWALL, G. 1967 [Finnish plastic hive for overwintering.] Bitidningen 66(6):206-208. In Swedish.*

RUTTNER, H. 1959 [Foam plastic.] Bienenvater 80(5):141-144. In German.

UKKELBERG, B. 1959 [Hives made of foam plastic.] Birkteren 75(2):22-27. In Norwegian.

WHELAN, D. 1943 Will bees go plastic too? Am. Bee J. 83(7):278.

40. *BRITISH BEE JOURNAL. 1879 The conversazione. British Bee J. 7:8-10.*

CHERNYY, M.F. 1975 Briefs. Am. Bee J. 115(4):133.

WALTON, J. 1974 The winter heat-balance of the bee hive. Am. Bee J. 114(9):337, 340.

WEDMORE, E.B. 1932 A manual of beekeeping. London: Edward Arnold & Co.

41. *CRANE, J.A. 1909 A study of the conditions in a box hive. Glean. Bee Cult. 37(1):35.*

Management Tips Contest

I have eight colonies located near my house which is about two miles from a good steady water supply. So I stacked four tires, one on top of the other behind some shrubbery near my house. About every third day I fill the tires with water from a garden hose. The bees can crawl down inside the tire and get there water with ease. I've never saw a drowned bee in there yet. What the bees don't carry back to the hive evaporates so there is always fresh water. **Daryle Isely, Argyle, WI 53504.**

I have found a convenient way to monitor the inside temperature of the brood nest area of a hive. Using an inexpensive indoor-outdoor thermometer, I take the outdoor sensor which is on the end of a long wire and put it between the frames of the brood nest area. This way I can monitor the inside brood nest temperature and also the outside temperature.

I live in California, so I realize the indoor part would not work in more severe climates. You could cover the thermometer to keep the sun off. **David E. Hopkins, 208 South Seventh St., Lompoc, CA 93436.**

Gadgets

As a hobby beekeeper I've found a gadget that is owned by just about everyone and is just perfect for solar melting of burr comb and even capping wax.

I am referring to the family automobile, which in my case is a 1975 Vega. Because of the large rear window combined with a black interior, a melting temperature is easily achieved.

Anyone having small children already know that crayons left in the rear window are also easily changed to liquid. **Milton Schalow, 7850 Yanbery Rd., Whitehouse, OH 43571.**

Honey Marketing Contest

Something I have found very helpful in selling my honey and beeswax to the public, is to just keep a beekeeping magazine or catalog of beekeeping supplies with me wherever I go.

I take one with me must about everyplace. How this helps me is that all the time people come up to me and will ask, 'do you sell honey?' or 'Do you have bees?' This has resulted in many sales, and it also gives me a chance to talk to people about bees. **Tony Spyker, Rt. 8, Defiance, OH 43512.**

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THE LATEST ON YELLOW RAIN

From Harold Sealey, Vermillion, S.D., we received a copy of the November 1, 1983 *CONGRESSIONAL RECORD* in which Dr. Amos Townsend of the International Rescue Committee assessed the theory that yellow rain, which has been cited as evidence that the Soviets are using chemical toxins in Southeast Asian warfare, is actually bee feces. He drew these, among many other, conclusions:

1. I have examined many different bee feces from different types of bees...and I have found none of the feces like the spots I examined...in Kampuchea...and none like the specimens brought to us so far.

2. I have found them over an area as large as 3 ⁵ Km2, which I am told by bee experts is totally unrealistic.

3. High pollen: Bee experts in Thailand have felt it was higher in concentration in the yellow spots than is normally found in bee feces. I noted only much more debris...than I have ever seen in bee feces.

Considering what I have seen and sampled of the yellow and white spots...I find it extremely improbable that even one percent of the alleged Yellow Rain episodes were of bee fecal origin.

Obituary

It has come to my attention that Dr. W.W. Maxwell passed away about a month ago. He was 87.

Dr. Maxwell was an M.D. specializing in Obstetrics. A native of Texas, Dr. Maxwell practiced for many years in San Antonio. Bees were a part of his family's activities as he was growing up and when it was possible he started keeping a few hives at his home in the heart of San Antonio. He sold my son and I our first hive and carefully showed us how to take care of it. He was as meticulous in handling his bees as he was a surgeon.

Carl H. Moore
San Antonio, Texas

Continued from Page 83

SIFTINGS by Charles Mraz

use of good, natural honey. Many have told me that a teaspoon of pollen a day helps reduce blood pressure, too. Since cardiovascular disease is the main cause of death in the U.S., making a diet change certainly couldn't hurt, and it might do a lot of good. For more than 30 years, we've done all our sweetening with sugar. My blood pressure is 120/70, and the doctor remarked that he could not improve on at much, it is the blood pressure of a teenager. I have heard it said, "You are as old as your arteries." I am not a teenager. I am now 78. If I am as old as my arteries, then I hope I can work with my bees for a few more years. There is so much yet to be done with Apiotheraphy so that the pollen and honey gathered from fragrant flowers will find their rightful place in our diet to help us maintain good health.

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NEWS AND EVENTS

OKLAHOMA

Paris Junior College, Shaweek, Oklahoma

An 18-hour basic beekeeping course will be offered by Paris Junio College's continuing education division beginning Tuesday, February 28, according to June Jones, Director of Community Services at PJC. Classes will be held from 6:30 to 9:30 p.m. Tuesdays and Thursdays for three weeks in the Alford Center.

Fee for the 28 hours of instruction is $45, to be paid in advance by mailing a check payable to Paris Junior College to the Continuing Education office or going by the office in the Alford Center on campus.

Instructor will be A.G. Bolton, who will use slides, lecture and observation in the class. He will discuss beekeeping hive component parts, construction and purposes, seasonal management, honey production, extraction and equipment, honey bee life cycles and activities, disease recognition, prevention and control, and handling bees. He has taught in the past for Paris Junior College and for the Gordon Cooper Area Vocational Technical School in Shaweek Oklahoma.

The course will be valuable for persons interested in establishing a beekeeping business and selling honey and or pollen, the instructor said. More information may be obtained by calling the PJC continuing education office (214) 785-7661, extension 445.

DELAWARE

Delaware Valley College Beekeeping Short Course

SPRING: Saturday, March 31, April 7, and 14, 1984

SUMMER: Friday, Saturday and Sunday, June 22, 23, and 24, 1984

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 cooperation with Mr. Jack Matthenius, N.J. Supervisor of Bee Culture), Mr Jon Whitbeck (Pa. Dept. Agric. Apiary Inspector), and Mr. Frank Makowski (N.J. 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 150 persons attended the 1983 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 $29; 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.

Other Honey Bee Related Activities Of Interest At Delaware Valley College

Thursday, March 29, 1984. 8:00 P.M. Joint meeting of Bucks County and Montgomery County Beekeepers Associations. Room 114 Mandell Science Building. Speaker: Mr. Jim Steinhauer, Supervisor of Apiculture, Penna. Dept. of Agric. Topic: Honey Bee Diseases.

Saturday, March 31, April 7 and April 14, 1984. Delaware Valley College Spring Beekeeping Short Course.

WISCONSIN

Wisconsin Honey Show Winners

Honey Show winners received honors at the Wisconsin Honey Producers Association state convention in Eau Claire in November. First place winners got plaques, while second place finishers received queen bees donated by Dadant and Sons, Watertown. Show winners included, front row, left to right, Michell Cisek representing Polesia Czar Apiary at Sturgeon Bay, Charles Bruner and Gary Heitkemper representing Sprucedale Gardens at Prentice, and REx Bowen of Milwaukee. Back row, left to right are Gerald Simpson of Eau Claire, Don Kohn of Withee, John Schamens of Eau Claire, Mark Kohn of Medford, Allen Baldwin of Darlington and Eva Cisek representing Polisea Czar Apiary at Sturgeon Bay. Winners not pictured included Les Philaja of Muskego, Herman Utke of Dousman and Wally Nass of Watertown.

MICHIGAN

Beekeeping Program

BEEKEEPING PROGRAM
Farmer's Week
Michigan State University
East Lansing, MI 48824
March 20-21, 1984
HIGHLIGHTS

9:30 a.m.	**Visist and Get Acquainted**
10:00 a.m.	**Movie: Pollination of Alfalfa**
10:30 a.m.	**Flowers, Nectar and Bee Foraging, Dr. Gloria DeGrandi-Hoffman, Department of Entomology, MSU.**
11:15 a.m.	**Bee Stngs, Dr. Robert Bybert, Bloomfield Hills.**
2:00 p.m.	**Swarm Management— Are You Winning The Battle? Dr. Clarence Collison, Dept. of Entomology, Pennsylvania State University, University Park, PA.**
2:45 p.m.	**The In's and Out's of Pollen Traps, Dr. Roger Hoopingarner, Dept. of Entomology, MSU.**
3:15 p.m.	**Break**
3:30 P.M.	**Honey Promotion Report and Introduction of Honey Queen Contestants, Joyce Guthrie, Utica, Michigan.**
4:00 p.m.	**MBA Research Grant, Brian Beery, President.**
4:15 p.m.	**Questions and Answers**
	Tuesday Evening — Kellogg Center Auditorium
7:30 p.m.	**Honey Queen Pagent**
	Wednesday — Kellogg Center Auditorium
10:00 a.m.	**Movie: The Toughest Job You Will Ever Love**
10:30 a.m.	**Beekeeping in the Peace Corps, Hank Thoenes, Phoenix, Arizona.**
11:15 a.m.	**Bees and Flowers Keep You Guessing, Dr. Clarence Collison, Dept. of Entomology, Pennsylvania State University, University Park, PA.**
1:30 p.m.	**Honey Plant Testing and Diversionary Plantings, Dr. George Ayers, Dept. of Entomology, MSU.**
2:15 p.m.	**Views from the Industry, Tim Dadant, Dadant & Sons, Inc. Hamilton, Illinois.**
3:15 p.m.	**Package Bees— Size, Timing, and Placement, Dr. Roger Hoopingarner, Dept. of Entomology, MSU.**

CALIFORNIA

California Short Course

A two day workshop sponsored by the Santa Clara Valley Beekeepers' Guild will be offered on March 31 and April 1, 1984. The instructor will be Dr. Norm Gary, head of the Bee Biology Laboratory at the University of California, Davis.

The first day will feature queen rearing while the second day will focus on all you wanted to know about honey. The program includes lecture and field demonstration.

The workshop will be held at the Farm Bureau Building, 1368 North Fourth Street, San Jose, California. Enrollment is limited. The cost is $45. For more information, contact David Finkle, president (408) 298-9107.

WISCONSIN

The annual spring and summer ETN program will be February 28th from 8 - 10 pm. Interested beekeepers should contact their local ETN office or county agent if interested, because advance notice is necessary to organizing the program. Questions can be directed to Walter Gojmerac at (608) 262-1762.

NORTH CAROLINA

Teresa Shifflette North Carolina Honey Queen

Teresa, 16, was born in Wilmington where she lived for four years. She moved to Kernersville and has attended Kernersville Elementary, Cash, Walkertown and Carver schools before going to East this year.

Teresa is the daughter of Mr. and Mrs. Ed Shifflette.

Teresa is an Eaglette at East Forsyth, a member of the Junior House of Representatives, a Junior Jaycette and a member of the Caprice Singers.

CALIFORNIA

State Beekeepers Select Honey Queen

At the recently concluded 94th annual convention of the California State Beekeepers held on the R.M.S. Queen Mary in Long Beach, Miss Pamala Shaw was selected to be the 1984 California Honey Queen.

Her many duties will send her throughout the State, telling about the diverse, delicious uses of the varieties of honey pro-

duced in the State. Pamala will, also, act as the industry's good will ambassador, explaining the importance of bees and honey to the economy of the state of California. At the end of her reign, Miss Shaw will travel to Tampa, Florida, to the American Beekeeping Federation convention where she will be entered in the contest for the American Honey Queen.

Pamala was born in Modesto and has lived near there most of her life in Waterford with her parents, Floyd and Lucille Shaw. Currently, Miss Shaw is attending Modesto Junior College where she is majoring in Child Development and Psychology.

OHIO

Northwest Ohio Beekeepers Association

The Northwest Ohio Beekeepers Association exhibited for the first time in the Allen and Wood Counties, Ohio fall fairs. The unique observation hive was of considerable interest to all those that viewed the exhibits in the agriculture building. The hive was designed and constructed by Donald Sr. and Jr. Cox.

NORTH CAROLINA

1984 Beekeeping Calendar of the North Carolina State Beekeepers Association

This annual beekeeping calendar is a joint effort of the N.C. State Beekepers Association (NCSBA) and the Agricultural Extension Service at N.C. State University (NCAES) is an excellent example of the type of productive cooperative effort that can be achieved between those two agencies. The calendar is produced primarily for the membership of the NCSBA, but it is made available to beekeepers throughout the state. In fact, several hundred copies are even purchased annually by out-of-state beekeepers. Any profits from the calendar sales are contributed to the Apiculture Science Fund for graduate research support in the apiculture program at NCSU.

Technical assistance for the production of the calendar is provided by the apiculture staff on the N.C. Agriculture Extension Service, and the NCSBA all of the funding for the production and distribution of the calendar.

Central Ohio Beekeepers' Association

Dr. Richard Taylor, author of "The Joys of Beekeeping," "The How-To-Do-It Book of Beekeeping," "The New Comb Honey Book," and other books will be the featured guest speaker at a special meeting of the Central Ohio Beekeepers' Association. The meeting will be held at the Franklin Park Conservatory, 1777 E. Broad Street, Columbus, Ohio, on Saturday, February 25, at 7:30 PM.

Dr. Taylor, who is a regular columnist for *"Gleanings In Bee Culture,"* will speak on the principles of comb honey production. The public is invited.

For further information, please contact Victor Thompson, at (614) 457-1361.

OHIO

Ohio Organic Farming Group To Have Conference in March

The Ohio Ecological Food and Farm Association, (OEFFA), will be holding its 5th annual meeting and conference on March 3, 1984 in the Ruff Learning Center at Capital University in Columbus, Ohio. The Conference will focus on local cooperation and control within agriculture communities.

Guest speakers will include Samuel Kaymen of the Rural Education Center of Wilton, New Hampshire; and Garth Youngberg, former USDA Organic Farms coordinator and current director of the Institute of Alternative Agriculture.

Also included will be a selection of workshops covering technical aspects of farm, garden, and local community. All are welcome.

For information contact:

OEFFA
7300 Bagley Road,
Mt. Perry, OH 43760
614/849-0105 or 614/546-4029

WASHINGTON

Seattle, W.A.S. Conference Very Enjoyable

The Sixth Annual Conference of the Western Apicultural Society was extremely well planned and conducted, making it a very enjoyable meeting. President Dan Mayer, Vice-President John Edwards and Program Chairman Carl Johansen planned a 5½ day meeting which integrated lectures, demonstrations, social activities and free time in the proper amounts to maintain interest and enthusiasm.

Lecture topics inlcuded informational material such as up-dates on Africanized Bees, *Varroa* and Acarine Mites; honey bees and specialized wasps; using bees to monitor pollutants; the bumble bee wax moth as an under-rated destroyer of stored combs; orchid pollination; and honey bees around power lines. Colony management topics included requeening, swarm management, overwintering queens in Canada, protecting bees from pesticides, controlling *Nosema,* and combining colonies for maximum honey production.

The demonstrations were particularly good. Bill Rahr showed how an experienced craftsman can cut all parts of the hive bodies and frames on a table saw. Les Molnar, European Master Beekeeper, demonstrated how he makes sheets of foundation, four ounces in weight, in a Hertzog Foundation mold. Joe Fiamengo dipped candles and showed how to avoid common mistakes in procedure. Roy Thurber discussed bear fences, and Roger Akre showed how must successful close-up photographers get good photographs using very expensive lenses or surprising inexpensive homemade substitutes.

Next year's W.A.S. Conference, scheduled for August 22-24 on the University of California, Davis campus, will be a bit shorter in duration but, hopefully, every bit as enjoyable as this year's conference.

ARIZONA
Beekeeper's Association of Central Arizona

"An outstanding exhibit!" "One of the best I've ever seen!" "It really is interesting and informative!"

These were some of the comments made by the hundreds of spectators who crowded around the beekeeping exhibit at this year's (1983) Arizona State Fair in Phoenix, Arizona.

The exhibit, covering some 1,000 square feet, was sponsored by the Beekeeper's of Central Arizona (BACA), a club comprising both the hobbyists and the commercial beekeeper's of Central Arizona and dedicated to the education of beekeepers (and potential beekeepers).

The highlight of the exhibit was an eight foot square screened cage which housed two hives of "free-flying" bees. During their confinement for the duration of the fair, the bees were fed frames of honey which were suspended along the insides of the cage. These drawn frames served a dual purpose; they fed the bees who actively foraged on them and at the same time they gave the viewing public an idea of the inner furnishings of a modern beehive. Periodically club members wearing protective clothing would enter the hive and "work" the bees, along with an accompanying narration.

Arizona State Fair officials in the agricultural section said that the apiary exhibit attracted more than any other part of their area.

For further information on BACA monthly meetings contact the following persons: Jerry Cline, 992-7035; Mike Kuzmik, 968-0969; Brett Cameron, 245-1391; John Clark, 268-0488, or write to BACA, P.O. Box 25644, Tempe, AZ 85282.

San Francisco

The San Franciso College District will sponsor a series of six lecture-demonstrations in practical beekeeping for city hobbyists. It will begin on Tuesday, Feb. 21 at 7 p.m. at the Marina Middle School, 3500 Fillmore St., San Francisco.

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.

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

VIRGINIA

1983 Virginia State Fair

"The 1983 Virginia State Fair was held in Richmond, Virginia from September 22 thru October 2, 1983. The Virginia Beekeepers Honey Booth is sponsored by Richmond Beekeepers Association. Eight Virginia Beekeepers Associations participated in this years booth making the booth truly representive of most of the State of Virginia. We were extremely successful in educating the public about different types of honeys and other hive products.

The 1983 Richmond Beekeepers Honey Queen, Miss Amy Adams was crowned by Virginia's Attorney General Gerald Baliles. The Governor's Award was presented to Robert E. Gibson, current President of Richmond Beekeepers Association.

MAINE

New Appointed State Apiarist

In states like Maine, which batten down the hatches between honey harvest time in fall and next spring's brood-rearing, there is ample time for reflection during the cold winter months. Accordingly, the Maine State Beekeepers Association has been wrestling with such bee-related concerns as:

(a) bear damage, which takes its toll in a sprawling, sparsely populated state;

(b) labeling regulations (or the lack of them), which affect the impact of imported honey; and

(c) the reduction of disease. The incidence at present is unfortunately greater than Maine's beekeepers would wish.

Fortunately there is now a Santa Claus—newly appointed State Apiarist Anthony Jadczak, a highly knowledgeable and unbelievably indefatigable laborer in the vineyard (i.e., the apiary). He cannot be expected to be a miracle worker, but in just the few months since his appointment Maine's beekeepers have come to realize that they have gotten a nice Christmas present—a man ready to link arms with them in the ongoing effort to work away at problems that apiculture has been, and will continue to be, heir to.

CALIFORNIA

At the 94th Annual Convention of the California State Beekeepers, Mr. Don Burkett of Reedley was elected the President of the 311 member organization. The new President has set as his goal "Unity Among Beekeepers" to develop a more unified effort among all beekeepers to help resolve the many problems confronting the industry.

DON BURKETT

Don addressed the problem of the Africanized bee as of top importance and that some form of control will be necessary to prevent the disruption of agriculture in most of the state. The President indicates that a special beekeeper tour of Venezuela to study the progress of the South American beekeepers in coping with the Africanized bee will take place later this year. Work is currently being done to try and genetically change these mean creatures and make them more docile. coming with these bees, you might say "hitch hiking", is the varroa mite. This mite enjoys feeding on the bees, thereby, weakening the hives to a point that they do not make honey or pollinate crops. Don envisions a strong research program to discover ways of combating or controlling this pest as a must for industry survival.

Don is a commercial beekeeper and active in community affairs. He and his wife, Shirley, and his two sons, Jeff and Brian, live in the Reedley area.

Other officers elected were Vice-President, Ron Penner of Red Bluff and Secretary, Frank Johnson of Riverside. The outgoing President was Jim Wickard of Riverside.

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Classified rates: 49 cents 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) count as one word. Not less than 10 words accepted. Copy or cancellation orders MUST be in by the 1st of the month preceding publication. Send classified ads to the A.I. Root Company, Advertising Dept., GLEANINGS IN BEE CULTURE, Box 706, Medina, Ohio 44258-0706 **Note: BLIND ADS: Any ad sent in that does not contain the seller's Name and Address within the ad, will be charged an additional $6.50 per month.**

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 (Sterling cheque 2.22 p.or U.S. $6.) Post paid. The Secretary, 15 West Way, Copthorne Bank, Crawley, Sussex, RH10 3DS TF

INDIAN BEE JOURNAL Official organ of the All India Beekeepers' Association, 817, Sadashiv Peth, Poona 411030. The only bee journal of India Published in English, issued quarterly. Furnishes information on Indian bees and articles of interest to beekeepers and bee scientists.

Annual subscription postpaid in foreign countries: For individuals US $7.00 for institutions, companies and corporate bodies US $10.00 or it's equivilent, to be received in advance by IMO or bank draft, payable in Poona (India). TF

WANTED

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

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

Wanted: Hardworking Full-time professional queen breeder. Must have many years experience in all phases of queen production as well as other general apiary work. South Atlantic state location. Salary negotiable. Contact: Huck Babcock, P.O. Box 2685, West Columbia, SC 29171. Phone: 803-256-2046.1/84

Wanted: Young beekeeper would like employment in apiculture, willing to relocate and has desire to succeed. Send brief letter of inquiry to: T. McAlicher, P.O. Box 1287, Frederick, Md. 21701. All reponse will be answered promptly with references. 3/84

Wanted: Looking to purchase Kelley's New Plastic Bottom Boards. Please write: Herman Butler, P.O. Box 125, Dubberly, La. 71024. 2/84

HELP WANTED — SINGLE MAN — Preferred — for raising queens in South and producing honey in North. Lodging provided with job. Howland Apiaries, Box BEE, Berkshire, N.Y. 13736 (607) 657-2517. 3/84

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Protective Clothing for Beekeepers. Write now for brochure. B. J. Sherriff, Dept. GBC P.O. Box 416, Nacoochee, GA 30571 TF

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HIVE MONITORING STETHESCOPE
SPECIAL DESIGN
OVER-WINTERING or SPRING BUILD-UP
YOU SHOULD BE LISTENING
$9.95
PKECO, Dept. C, P.O. Box 448,
Louisville, KY 40201 7/84

For Sale — Bulk Pollen. Minimum order 300 lbs. 208-896-4552. 12/83

COMBAT BEEKEEPING IGNORANCE WITH CONNOR'S TWENTY EDUCATIONAL SLIDE PROGRAMS. Box 817 Cheshire, Connecticut 06410. TF

For Sale: 250 strong bee hives and equipment. Carroll Couture, Belleville, KS (Northcentral Kansas area) 913-527-5805. 4/84

For Sale: 50 — 2,000 Hives. YOUNGBLOOD APIARIES, 1216 East Alabama, Pearfall, TX 78061. Phone: 512-334-4430. After 5:00 P.M. cal 512-334-3536. 2/84

For Sale: Oil painting (1978) by Crossan Hays Curry. Portrait of Lorenzo Lorraine Langstroth the "father of modern international apiculture". Included are a bust of Langstroth in clerical costume, his revolutionary beehive, his Oxford, Ohio home which is now a National historic landmark and other autobiographical details. Painting is on fine Belgian linen. Size: 30 x 40 and is mounted in a massive antique, gilt frame. Price: $750. Contact C.H. Curry, P.O. Box 105, Oxford, Ohio 45056. TF

FOR SALE: Top quality Italian bees and queens since 1940; also 3 frame nuclei and single story colonies. Bring your cages and save. WALKER APIARIES, Rt. 1, Box 34-B, Rogers, Texas 76569. Phone: 817-983-2891. 6/84

500 4/frame nucs for 1984. Frame exchange or outright. Low Price. Pickup Southern Minnesota. Gerald Truman, Phone: 507-324-5716. TF

Nucs 4-frame Golden Italian stock $25.00 each or 3 for $100. Queens $5.00 each. All postpaid. Small orders only. 194 Cooper-Hurst Rd., Pearl, MS 39208. Phone: 601-939-5994. 5/84

500 Single Story Hives of Bees. Available April 15, 1984. $4.00 each. All or Part. Contact: Tom Hubbard, P.O. Box 416, Belleview, FL 32620. 904-245-2461. 4/84

2½ lb. Honey Jars—$2.25 per case (12) with plastic caps. 1½ lb. Honey Jars—$2.00 per case (12) with plastic caps. Beeswax wanted. Send order to William Wilsen Honey Farms, Rt. 1, State Route 95, Fredricktown, OH 43019. 614-694-5071. 1/84

SUPERS SUPERS SUPERS
For Sale: 3000 Brood chambers, covers and bottom boards. 3000 Deep Supers. 3000 6-5/8" Supers. All equipment standard 10 frame.

2 — 3000 gal. Insulated stainless steel tanks, sumps and switches. 2—100 Fr. extractors. 1 Heat Exchanger. 1 Cook & Beals Uncapper. 1 Cook & Beals Wax Separator. 2 Moyha Honey Pumps. Many other Bee Supplies. Everything Must Go. Gerry Kunkel, Rt. 2, Baraboo, WI 53913. Phone: 608-356-7038. 2/84

MARYLAND BEEKEEPERS and adjacent states: Package bees for pickup April 14-15 near Frederick, MD. (queens fed Fumidil-B). 2-lb. pkg. $22.75; 3-lb. $26.75. $4.00 per pkg. books order. Ernies Apiaries, 9933 Kelly Rd., Walkersville, Md. 21793. 301-898-9746. 3/84

For Sale: 1200 deep supers—drawn comb. Carroll Couture, Belleville, KS 66935. Ph: 913-527-5805.4/84

For Sale: 2,000 excellent brood chambers. 9⅝. 3,000 supers $8.00. Minn. 507-778-3307. 4/84

BEEKEEPING JOURNALS — Separate isues and volumes. M. Johansson, Box 42, East Berne, NY 12059. 2/84

Four Frame nucs and singles available early in May in north-central Illinois. Tanners Orchard, Speer, Illinois 61479. Ph: 309-493-7781 or 309-493-5442. 5/84

For Sale: 5 Frame Nucs and single story hives. West Central Wisconsin. Call Marqson Company 612-934-3168 or 715-263-2633. 4/84

FOR SALE: KELLEY HIVE LOADER, FOURTEEN FOOR BOOM, PERFECT CONDITION $1000.00 PETER GENIER RD 1, FAIR HAVEN, VT. 05743. PHONE: 802-537-3961 3/84

For Sale: 200 Live Hives $55.00 negociable. Ronald Werling, Box 19 Wapakoneta, Ohio. 419-738-4969. 3/84

Package bees delivered to CENTRAL WISCONSIN. Pick-up at Manawa Shoe Store — Downtown Manawa. Call or write for prices. Pesorsch Honey Farms, Manawa, Wisconsin 54949. 414-596-2289. 3/84

BEES & QUEENS FOR SALE

WE USE ALL POSSIBLE CARE in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for a certificate of inspection as a matter of precaution.

150 9-Frame singles available April 15, 1984 $40.00 each. All or part call 602-945-1672 or write Sweet Haven Apiaries, P. O. Box 183, Navajo, AZ 86509.2/84

75 strong colonies in two medium CYPRESS supers — Telescoping covers — Excellent equipment. $45.00 each. H. Rogers, P.O. Box 518, Hope, Arkansas (501) 777-5510. 3/84

NUCS — 3 or 4 FRAME
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(512) 251-3823 or 836-1675 3/84

Package Bees — April 1 to May 10 pickup in Northeast Texas. Charles Engle, Wolfe City, Texas 75496 214/496-2223 4/84

Nucs $25.00 — 3-frames/queen — Hybrid — guarantee live delivery — Shipped in cardboard container. F.O.B. Dixie Honey Company, E. A. Cannady, 919-579-6036. Rt. 3, Box 206A, Shallotte, NC 28459. TF

Colonies for sale in Florida. Call Evenings only, (904) 567-9495. No Collect Calls. Terms Negotiable. TF

Carniolan Bees & Queens, Queens $6.50 each, 3 lb. pack with Queen $22.50 each, 2 lb. pack with Queen $16.50 each. Live delivery guaranteed. Health certificates furnished. Shipments begin April 10th. **King Bee Apiaries,** Rt. 4, Box 90, Greenville, AL 36037, Ph: 205-382-2305 TF

MICHIGAN BEEKEEPERS. I will be hauling package bees from Georgia again this spring. For prices, dates and information call Don Reimer at 517-695-9031.4/84

Royal Queens, Champion Nucs, Prime Cells. Bruce and Jeannie Otte, Rt. 2, Box 99-A, Karnes City, Texas 78118. (512) 780-3521. 5/84

PACKAGE BEES delivered to Wisconsin near Green Bay, Eau Claire and my home, Ronald Hazard, RT 2, Poynette, Wis. 53955. Phone: 414-992-3217. 4/84

GENTLE ITALIAN QUEENS. All breeders individually tested DISEASE RESISTANT. 1 — 9 $6.50; 10 — up $6.00. C/M 50¢ ea.; deduct $1.00 after June 1st. GOLDEN WEST BEES, 436 Norvin, Grass Valley, CA 95945, (916) 273-4606 TF

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WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. Hubbard Apiaries, Onsted, Mich. TF

BUCKWHEAT, light and light amber honey. Bedford Food Products, Inc. 209 Hewes St., Brooklyn, N.Y.TF

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. Hubbard Apiaries, Onsted, Mich. TF

All Grades of Honey. Any quantity drums or cans. Call Toll Free 800-248-0334. Hubbard Apiaries, Inc. Box 160, Onsted, Michigan 49265 TF

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

WANTED — All grades of extracted honey. Send sample and price to MacDonald Honey Co., Sauquoit, New York 13456. Area Code 313, 315-737-5662. TF

WANTED: Comb and all grades of extracted in 60's or drums. Send sample and price to MOORLAND APIARIES, INC., 5 Airport Drive, Hopedale, MA 01747. TF

HONEY FOR SALE

CLOVER, ALFALFA, Buckwheat, Tulip Poplar, Wild Flower or Orange in 60's. Dutch Gold Honey Inc., 2220 Dutch gold Dr., Lancaster, PA TF

HONEY IN 60's FOR SALE. Bedford Food Products Co., 209 Hewes St., Brooklyn, New York 11211. Phone: 212-EV4-5165, TF

CLOVER, ORANGE, U.S. and Yucatan Wildflower, in sixties. Other flavors and bakery grade available. MOORLAND APIARIES. 5 Airport Drive, Hopedale, MA 01747 TF

HONEY for sale: Clover, Wild Flower, Alfalfa: Wholesale prices. 60 lbs. to truck load. Bee Pollen — 5 lbs. to 100 lbs. Call or write for prices. Glorybee Honey, Inc., 1006 Arrowsmith St., Eugene, OR 97402. Phone (503) 485-1649. 6/84

Answers to Testing Your Beekeeping Knowledge

1. True — Most apple varieties are self unfruitful and a few are cross unfruitful. Trees of the same variety are vegetatively propagated and are genetically the same, thus their flowers are self-sterile. All varieties do not bloom at the same time. A well designed orchard will provided adequate numbers of pollinizer varieties properly distributed throughout the orchard. The pollen should be cross-fruitful for both varieties and bloom periods must coincide.

2. False — Drones produced in worker-sized cells from eggs of laying workers are perfectly capable of producing viable sperm. These drones, however, are smaller in size and bee breeders try to eliminate the possibility of using them for instrumental insemination.

3. False — There were no honey bees in North or South America prior to the migration of Europeans to these continents. The earliest reference to the introduction of honey bees into the United States was 1622 in Virginia.

4. False — Caucasians rather than Carniolans are known for propolizing excessively.

5. False — The presence of larval skins in front of a colony is an indication that the colony is starving. Workers suck juices from the brood to stay alive. Drone larvae will be destroyed before worker brood.

6. — Resmethrin (SBP 1382®), a synthetic pyrethroid insecticide, is registered to kill diseased colonies whose frames and combs will be destroyed. The insecticide is formulated as a 1% aerosol and is available from bee supply dealers.

7. E — The Nassanoff or scent gland is located internally under the base of the 7th abdominal segment. When a worker is scent fanning, the abdomen is positioned up, the last abdominal segment is bend downward, exposing a membrane on the dorsal surface of th abdomen that is moist with a secretion that volatilizes rapidly.

8. E **9. A** **10. B** **11. D** **12. C**

13. Depending upon the needs of the colony, honey bees actively collect nectar, pollen, water and propolis as they forage away from the hive. Pollen and propolis are transported in the pollen baskets (corbiculae) located on the hind legs and water and nectar is carried in the honey stomach which is located in the anterior portion of the abdomen.

Undoubtedly, some of you included honey in your list of answers. Honey, however, is a product made by bees from nectar and cannot be collected outside the hive unless it is robbed from other colonies. During a partial or total absence of a nectar flow, honey bees may also gather honeydew, seed from bird feeders, grain from animal mangers, coal dust, caulking from windows, etc.

Scoring

11 — 13 points (excellent or expert) **9 — 10 points (good or competent)** **7 — 8 points (fair or novice)**

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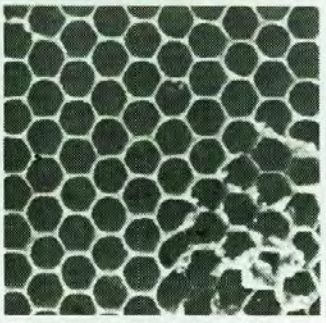

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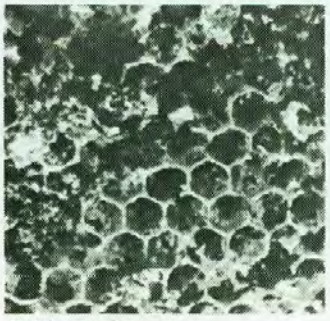

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Send for a free catalog for the listing of your nearest Root Dealer.