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NOVEMBER 1985

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THE WORLD'S MOST POPULAR ENGLISH LANGUAGE BEE JOURNAL

CONTENTS

A time for Thanksgiving. A time of appreciation for bees and all the good things they bring.

Gleanings Mail Box

Dear Editor:

Thank you for sending the sample copies of *Gleanings in Bee Culture.* I put a subscription envelope in each copy. I hope you will soon receive many subscriptions to your great magazine.

We live in a tourist area and would like to extend an invitation to our meeting to anyone visiting Acadia National Park, Blue Hill, Bar Harfo, Ellsworth, Deer Isle or surrounding areas. We meet at Meadowview Apartments on the first Tuesday of each month at 7:30 p.m. If you plan to attend and would like directions, call 244-3684, 667-4406 or drop in at the Dwight Brown Insurance Agency on Main Street in Ellsworth.

James R. Reed
Downeast Chapter
Maine State Beekeepers Assoc.

Dear Editor:

I am a hobbyist beekeeper who often finds himself patronizing many of the commercial queen breeders. I have fun re-queening and experimenting with the different races and varieties of bees. Perhaps re-queening is just a reason or excuse to work with my bees. I guess just looking at my bees isn't enough to satisfy me.

Prior to re-queening, I often find the attendant bees very reluctant to leave the queen cage. The queen herself seems more interested in scooting through the open hole than they do. Releasing the attendants took me anywhere from five minutes to a half hour. More recently, I've used a pair of skinny needle-nose pliers to pull the attendants through the open hole. One eye is constantly on the queen, however.

I very seldom use my smoker when working with my bees. I feel not using my smoker is a good way to learn the art of not acting like an intruder. The bees thus carry on their normal functions and are not put into a stressful situation. If a hive on a good day and by reasonable standards can't be manipulated in this manner, I know it is time to re-queen. With slow but steady movements and being relaxed and not nervous, my bees don't treat me as a threat to their general welfare.

Nothing beats the serenity of working with, watching or thinking about bees in contrast to the uneasiness of today's world. I love my hobby and would hate to see the African bees ruin it for me and others.

Tim Kelly
Apt. 7 — 1210 148th Ave.
Lutz, FL 33549

Dear Editor:

In the June issue of *Gleanings* there was in the "Question & Answer" section, a answer to a question that disturbs me very much.

The question was as follows: "Does the brood chamber of a hive remain contaminated after a colony has been killed by pesticides."

Answer: No. Colony loss from Sevin is caused by bees bringing contaminated pollen back to the hive.

The pollen remains poisonous to them for about three weeks but is not otherwise contaminated. Even when Sevin is sprayed directly over an apiary there is no significant loss of the bee population.

I have been keeping bees for 25 years and in that time have had many experiences with sprays.

I have found that when a hive is killed by any pesticide, that all pollen has to be removed in order to put new bees in that hive.

Last year a fellow beekeeper told me that at the University of Michigan they tried to put bees in a hive that was killed by pesticides over a period of four months and couldn't.

I have lost hives many times. Three times I have lost 8 out of 12 , 6-8, 4-8. I lived near a nursery and they spray all the time. You cannot spray over a hive of bees unless they are covered. If you spray the area they are working you will get a large bee kill.

I hope that when this is read by beekeepers that they don't get careless in spraying.

John Jennings
12 Center Rd.
Hoppinton, MA 01748

Dear Editor:

I've been noticing with concern that *Gleanings* continues to carry a monthly advertisement for the *South African Bee Journal,* the bi-monthly publication of the South African Federation of Beekeepers Association. While I'm sure that South African has a lot to offer of interest to beekeepers, I urge the editors to cancel the running of this ad until such a time that South African ends racist apartheid. Under apartheid 5 million whites deny basic human rights to 24 million voteless blacks, and the recent government "state of emergency" has injected a serious new dimension to the oppression. I seriously doubt that blacks are even allowed to be members of any South African Beekeepers Associations.

This small step of *Gleanings* cancellation, along with a letter of explanation, would be another note in the chorus of opposition to that country's inhuman policies.

Brian Adams
19 S. Main
Haydenville, MA 01039

Dear Editor:

I enjoyed reading the letter of Mr. Ben Locher in the September issue of *Gleanings* "Mailbox".

I have read a hundred times about people using cone shaped screens to trap bees out, but nobody ever mentioned that the bees that are trapped out supply the bees inside with nectar, so that after enough bees are outside, life goes on as usual inside, because they have everything they need, except probably pollen.

The better way is Mr. Locher's. There should be no communication between the bees outside and the bees inside.

It has been a good summer, because I learned some things. I learned to replace the queen as soon as there is a slight sign of a poor brood patterns. I had always introduced new queens in a Thurber cage, but this year I came up with the idea of crushing the old queen and rubbing her all over the introduction cage, before dropping the old queen right into the hive. The bees must certainly be confused about the smell of the new queens! It sure worked for me!

Gerhard K. Guth
P.O. Box 131
Auburn, NH 03032

Dear Editor:

One of my nurses brought to my attention an article concerning allergic reactions to bee stings published in your August, 1985 issue of *Gleanings In Bee Culture*. This article implied that the use of Primatene Mist would be sufficient to treat allergic reactions to bees in individuals at risk. I think this is a dangerous misconception. Allergic reactions to bee venom constitute what is called an anaphalyctic reaction. Obstruction of the airways is only part of this reaction. Skin component including hives and swelling as well as more importantly hypotension (low blood pressure) are others. It is the last of these symptoms, the low blood pressure, which may place sensitive individuals at most risk for death and is totally uncontrolled by inhaled medication.

There are essentially two major reasons why inhaled medication, whether Primatene Mist or Bronkaid Mist would prove ineffective in controlling entirely an anaphalyctic or allergic reaction to bee stings. The first of these is as noted above that this route of administering the medication would not control low blood pressure, a particularly severe component of allergic reactions in some individuals. The second, and perhaps as important, is the inadequate way in which inhalers are taken. Unless an individual is aware of the proper use of the meter dose hand-held nebulizer units, they will be unlikely to administer this properly, particularly in an emergency situation. Although somewhat more expensive as you have noted, the Epipen device is overall a very economical insurance policy for someone who may be at risk of even losing their life if they are exquisitely sensitive to venom or other allergenic substances.

Rather than home remedies I think the proper approach to this problem would be to consult your physician regarding the risk factors involved and obtain proper advice for a condition which could prove extremely serious. I hope that this misconception is corrected in your journal as it would be unfortunate if one of your readers had an outward event which was not controlled by the inhalation agent. I would in not way dispute on the other hand the fact that an inhaled medication may prove quite effective in controlling the asthmatic and possibly partially the upper airway congestion in an allergic reaction. However, even in these cases, the reaction may be so immediate and severe that injection is the only possible way of hoping for control and in some cases only partial control.

Frank J. Twarog, M.D., Ph.D.
Assistant Clinical Professor
Harvard Medical School
Associate in Allergy
Children Medical Center
Boston, MA 02146

Dear Editor:

It is interesting to see English Beekeeping throughout the eyes of our American friends, Arnold and Connie Krochmal (cf article of Urban Bees, London) who visited us in London earlier this year. It would, however, surprise London beekeepers to hear that there is a severe shortage of nectar flow in July! Late June to mid-July gives the London bees a main flow of nectar from Lime Blossom and Tree of Heaven (Ailanthus, which flowers mid-June) plus a variety of floral nectar from garden flowers. Rural areas in Englad sometimes experience what has become known as "The June Gap" because of lack of flow at this time. The trees in London's parks and squares and the somewhat higher temperature in the city mean that this is not applicable here.

While there is no national registration of beekeepers or hives in England, there is the British Beekeepers Association (B.B.K.A.) to which individual members and associations are affiliated.

Connie Lane, 24 Colney Hatch Lane
London, N10 1DU

Dear Editor:

My husband, Andre, is a very keen beekeeper and wants very much to make beekeeping his livelihood as he loves it so much. He also enjoys making bee equipment as he is very clever and good with his hands.

The reason why I am writing to you is to ask you if you could please let me know if there would be any chance for Andre to get work in America working in the bee industry, to gain more knowledge of beekeeping right through marketing and manufacturing bee equipment. The idea being that Andre could go over to America and work and then we could follow at a later date. It is not the right time here in South Africa to sell our property so it would be better if Andre could get established just before we were to follow.

Andre is a qualified Electrician & Builder and had his own business, but things did not plan out too well and he closed down his business. Quite frankly, he is not at all happy being an electrician and does not want to continue in that line of work. The building part he is quite happy with but right now there is just not any work to be had. He is a very young and active 42 year old, and married to me.

Andre and I have two little girls, Deidre aged 3½ years and Melissa aged 19 months.

I am a qualified Conveyancing Secretary having worked in Real Estate. Things over here are not too good economically and I know if Andre was doing what he really loves working at we can only be successful.

At the moment we are living from day to day and there is only one thing that Andre would really be happy doing, i.e., working with bees and all that goes with it. He is certainly not afraid of hard work.

If you could advise me in any way what would be the best thing to do I would be most grateful. I did not know who else to approach and I hope you do not mind my writing to you like this.

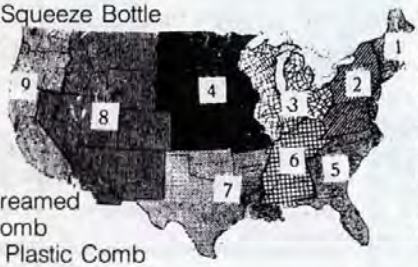
I truly hope to hear from you soon.

Thelma Peters
P.O. Box 595
Hillcrest 3650
South Africa

The Monthly Honey Report

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	45.00	42.00	52.00	34.50	42.00	40.00	38.00	36.00	42.50
60 lbs. (per can) Amber	42.00	40.00	42.00	32.40	33.00	35.00	30.30	34.50	37.80
55 gal. drum (per lb.) White	.52	.55	.52	.59	.64	.55	.55	.60	.58
55 gal. drum (per lb.) Amber		.52	.42	.54	.53	.52	.50	.57	.54
Case lots — Wholesale									
1 lb. jar (case of 24)	28.50	24.00	23.75	20.40	25.00	24.00	25.00	25.40	25.20
2 lb. jar (case of 12)	27.50	24.00	22.75	20.16	26.20	24.00	21.50	25.24	
5 lb. jar (case of 6)	30.00	28.50	23.95	24.90	28.50	24.00	21.50	25.24	24.60
Retail Honey Prices									
½ lb.	.90	.90	.75	.99	.90	.90	.85	.90	.89
12 oz. Squeeze Bottle	1.50	1.25	1.29	1.09	1.25	1.35	1.35	1.29	1.19
1 lb.	1.50	1.40	1.35	1.19	1.50	1.55	1.52	1.50	1.40
2 lb.	2.70	2.60	2.45	2.50	2.50	2.60	3.00	3.19	
2½ lb.	3.75				3.55	3.25	3.50	3.59	
3 lb.	4.00	3.75	3.15	3.44	4.60	3.85	4.00	4.00	3.40
4 lb.	5.00	4.95		4.40	4.98	4.90	5.00	5.00	
5 lb.	6.00	6.00	5.25	5.50	5.75	5.80	5.90	5.90	5.25
1 lb. Creamed		1.75	1.45	1.40		1.39	1.50	1.55	1.40
1 lb. Comb	2.25	2.25	2.25		2.00	1.85	2.00	1.80	
Round Plastic Comb	1.50	1.75	1.85				1.75	1.65	1.75
Beeswax (Light)	1.35	1.35	1.10	1.40	1.25	1.25	1.17	1.15	1.50
Beeswax (Dark)	1.20	1.15	1.05	1.25	1.12	1.10	1.10	1.10	1.25
Pollination Fee (Ave. Per Colony)	28.50	20.00	27.50	15.00	20.00	21.00	27.00	18.00	25.00



REGION 1

Honey crops vary greatly in areas just 10 miles apart. Soil type and PH seem to make the difference as most areas got about the same moisture. Seventy-five to 100 pounds per hive was the rule with some up to 150 lbs. Insecticide problems were small as compared to most other years. Beekeepers efforts seem to have paid off for Connecticut. Other states should look to Connecticut for help with their problems. Honey sales have picked up as usual for this time of year. However, most beekeepers are looking at a long lean winter with little income and not much money for spring expenses. It is felt that if the U.S. Beekeepers lower their prices to about .40 lb. for honey, other countries will lower their price even lower.

REGION 2

It has been some time since I've seen such variation in honey prices in the local market. Canadian honey in one pound jars is selling for $1.29 and on the same shelf is Argentine honey packed by a U.S. packer for $1.99. Local beekeepers in the Farmer's Market continue to sell local honey for $1.25. An averge price remains between $1.59 and $1.69.

The honey crop in general, western and northern New York was very good. Parts of the Champlain Valley were also good, in fact, better than in six to eight years. The quality of that I have seen is good. The goldenrod flow was good.

Bees going into fall with plenty of stores. Honey crop twice as good as last year. Warm weather during September has kept flowers in bloom so there is some flow on. Honey sales fair. The government "give away" of honey is also hurting sales.

REGION 3

South & West parts of Indiana fair to poor crop. North & East good. Sales better than expected. Quality and variety most sought after by the consumer. Little packer activity in Indiana. Honey still trickling in from fall flowers. Many of the the smaller outfits (15-20 colonies) selling out in Indiana. Prices much lower on live colonies and used equipment.

S.E. Wisconsin had better than average crop (maybe 100-120 lbs. per hive). Bees worked well until Sept. 7th. Have yet to have U.S.A. beekeepers offer to sell any honey. Canadian market stronger.

Illinois honey crop was short last years. Flow was spotty. Good crop in some areas with practically nothing in others. Some beekeepers selling honey below price support level rather than fool with all the red tape. Quality of the liquid honey is excellent. Water white and low in moisture. Hardly any fall flow.

REGION 4

The final crops in S.E. Minnesota seems a little less than the 100 lb. average that most producers set estimating. Recent rains have improved prospects for pastures and ha ground for next year. Bees are going into winter in good condition.

Region 4 — Con't

Honey sales are still very slow. A local packer who is bottling his own production is staying with the above price schedule but is finding one pound jars of competitive labels retailing at $1.06 compared to his $1.43. The 1.06 honey is obviously foreign bulk. My honey is going to the commodity credit corp. for the first time. It's the only alternative that makes economic sense as producers who are selling to the largest Twin City bottles are getting .46 per lb., drums returned. He is probably going to lower his offering price soon. Wonder if we can get some musicians to hold a "Honey Aid" concert for us.

Local honey does not seem to be in as plentiful as in prior years. Considerable moisture in both August and September. Some prices are quite high at retail or outlets as locally produced honeys. High price items are not exceptional quality or fancy packs. One local outlet has one ounce of beeswax for $2.00 each.

Missouri has had a pretty good honey crop this year. We had some dry weather that slowed the flow down. The fall flow started off good with a good crop of goldenrod, but now it looks as if cool weather is going to stop it. The honey this year is a poor grade of clover honey. Sales are slow for now.

REGION 5

Bees are starving, very weak in this area. No rain for the last 30 days. Aster and goldenrod has not started to flow. Very little brood (uncapped) in hives. Queens stopped laying a few weeks ago because of hot, dry conditions.

FEED — FEED — FEED is the word here in Eastern N.C. Hives would literally starve were it not for sugar water. Wild aster looks abundant but hurricane Gloria could ruin that! Let's look forward to a good year in 1986!

REGION 6

September has been very dry until beneficial rains late in the month. There was a heavy but short Spanish Needle flow which produced 40 to 50 lbs. surplus in limited areas. Also bees were working goldenrod well. Asters were beginning to bloom. Weather had turned cool. Extracting was behind schedule because the entire crop was late this year. Market was only fair with bakery grades moving the best.

Prospects for fall flow very poor due to dry weather. Feeding will be necessary for winter stores. Honey sales are slow with prices unchanged from last month. The flow this year is about one third of normal.

REGION 7

Fall honey flow very good due to Aster, Broom Weed and goldenrod. All beekeepers have had above average honey crops in Northeast Texas. This has been a dry and hot year. Pools and creeks have gone dry. Having to keep water out for bees due to dry weather. Had only 1/2 inch rain since first of June through Sept. 15, 1985.

Bees had a very good year over most of Texas. Recent rainfall has helped to fill the brood chambers for fall and winter. Broomweed, goldenrod, thistle, scrub willow and queen crown all in bloom now. As I write this report the first day of autumn, temperature range 88°-65°F. Honey sales average. Pollen sales have a good interest lately.

Good rainfall across the state during September. Fall honey plants in good condition. Bees bringing in good amounts of pollen and nectar. Colonies are in very good condition. Weather is beginning to turn cool. Retail and wholesale demand for honey remain stable for this time of season. Due to large honey crop this year packers have a good supply of honey on hand. Good import honey from Mexico is being quote at 30 cents a pound for amber and 37 cents per pound for white honey. Supply business is very slow. Most beekeepers waiting to see what happens before expanding operations. More bees than normal are on the market as many beekeepers are reducing the number of colonies they keep or they are getting out of beekeeping.

Cool weather has arrived in Oklahoma and the bees are in good condition with plenty of stores and young bees. Best year in many in this area. Honey sales are slow but the demand for pollen is good. We have plenty of moisture at this time and asters and golden rod are in full bloom. Prices for honey vary from $2.95 a quart to $6.50 a quart. Some of the small beekeepers are afraid they can't sell all their honey so they are almost giving it away. We have a saying (if you don't have honey until the next harvest you sold your honey too cheap).

REGION 8

Montana has been officialy declared "distressed" with 55 of its 56 counties named emergency areas. The disaster declaration frees federal loan programs and low interest loans for qualifying producers and small businesses in the state. Declaration is based on grasshopper infestation and drought damage from Jan. 1 through July 31, 1985. State honey production way down and honey from bankrupt Montana packers appearing in stores at reduced prices. SBA sold honey at auctions. Late August rains and early September rain and snow helped fall plants. Surviving hives should go into winter in good shape.

Most colonies in good condition in Arizona. Late summer flows good in some areas, poor in others. Some colonies weak in need of feeding.

Extracting is about finished in Colorado with crop being somewhat below normal. Too dry in middle of summer and too much rain the first two weeks of August. Bees will have well filled brood nests. Temperatures have dropped to low 30's and with snow on the peaks, winter is just around the corner. Retail sales have been steady with very little foreign honey showing up in grocer's shelves, most packers have been kept busy.

REGION 9

Due to the lack of moisture in the state this year, there has been a very poor honey crop. In some areas nothing was produced, whereas in other areas there was maybe a 20 lb. average. Poorest crop in many years. Lots of colonies will have to be fed before winter. Honey sales remain fair to good. Demand is fairly high because of poor crop.

Strong cotton flow in west side of San Joaquin Valley. Some colonies have made two boxes of honey. Some locations blue curl flow is strong on central coast. Other locations are making much star thistle also on central coast. Some Sierra Mountain locations doing poorly. Several large honey sales to institutions. Bakery honey

Continued on page 605

How Hobbyists Sell Honey

By GRANT D. MORSE 121 Ulster Avenue Saugerties, NY

Editor's Note: *Our friend, Grant Morse, passed away several months ago but we are pleased to still present articles from his informative file.*

Small scale operators often find it difficult to sell their surplus honey. I class any beekeeper who keeps from three to 100 colonies as a hobbyist. I can think of at least a half dozen ways for a small scale operator to dispose of his honey.

Sales At Home

First, many hobbyists put a honey for sale sign in their front yard. Some hobbyists shy away from doing this. They don't want to label themselves. Many of them object to being interrupted at all hours for the purpose of selling to an occasional customer. I understand that attitude. I shouldn't like to be a part of it. Some don't mind. But the fact remains that if one is willing to subject himself and his family to that kind of program, he can sell a considerable quantity of honey.

Some small scale operators try to modify these objections by putting out a sign that reads, for example: Honey for Sale at Honey House at rear on Wed. between 5:30 & 7:00 p.m. Some sellers of honey have even go so far as to assign a front room of their dwelling to the display and sale of their product. If a small adjacent building is available, it can advantageously be converted into a sales building.

Selling Through A Road Stand

A second channel of disposal for honey is a home road-side stand, particularly if one lives out in the country.

If the road in question carries considerable traffic, sales may be quite satisfactory. Some try to man the stand. Others depend upon the honesty of the customer to leave the right change. Good signs at a short distance on either side of the stand help to slow down a would-be purchaser. Most people are honest, so such a stand usually pays well. It may even yield so liberally that the operator can afford to pay someone to tend it. Rural beekeepers sometimes find a stand an outlet for other items too.

The Other Man's Road Stand

One of the best outlets for sale of honey by hobbyists, I have observed, is the general road stand operated by someone else, and featuring a variety of articles for sale. If another beekeeper has already sold honey to

the operator of such a stand, the operator may be willing, nevertheless, to take on a second brand — yours.

Competition may give you a rather quick indication how attractive your honey in your package is when compared with that produced by another beekeeper. Usually it pays to offer the operators of such stands a variation in size of container. The nature of the label on your honey containers will influence sales markedly. I believe it pays to use a bit of color in the label, though white is all right; also, not to use so large a label that the sunlight is shut off from yielding a clear view all the way through the jar. Tin pails sell well, too, but both the road stand operator and the potential customer like to be able to judge the quality and nature of the honey in the pail by first examining the product in the glass jar. Of course, no hobbyist would want to be guilty of putting a lower class product into an opaque container such as a pail.

It's obvious, too, that the hobbyist should not offer honey for sale to anyone, anywhere, until he has learned how to process it. I refer particularly to straining it carefully to keep out all extraneous material; also to letting it settle in the tank for approximately three days and then skimming it to remove all scum and air bubbles. Care needs to be used too, in not letting the honey flow any considerable distance from the tap to the container. Even when utmost care is taken to avoid the honey as it falls from taking in air, some small quantity, at least, may be absorbed. This leaves a layer of foam at the top of the container, and subtracts from its appearance. It also reveals either an unknowing or a careless processor.

Honey sold at roadstands does not usually stand on display long enough to encourage crystalization, so most honey sold at roadstands is not heated. It ordinarily does not need to be. Furthermore, the product is likely to be of higher quality if not heated by a small-scale operator who has not yet learned how to heat honey properly without overheating portions of any batch, and thus damaging it. He may lack proper equipment too. Heating honey to the right temperature consistenly demands both skill and good heating equipment.

Beekeepers who wish to send a written message along with their package can compensate for the small size of the label by providing an accompanying brochure or sheet telling about honey in general, and their product in

Continued on next page

Continued from previous page

particular. I suggest that a hobbyist who ventures to provide such a message have it checked over by his state apiculturist for accuracy and content, not the county agent who may not be an expert in beekeeping and honey — as many do not claim to be.

Occasionally one comes across printed claims for honey that are too extravagant. It's all right for anyone, including a hobby beekeeper, to believe that honey is the most wonderful food in the world and a cure for all man's ills, but that has yet to be proven. No one gains when unproven claims are made for the nutritional or therapeutic values of honey. Everyone loses. Even sales are hurt and they should be.

Honey labels are important. I see no strong objection to the use of the word "pure" on a honey label, though it is — or should be — superfluous. I approve of the procedure of placing his name and address on the label. I particularly like to see the label include a statement of the source from which the honey was made—provided, of course, that the producer knows the source. If the sources are varied, as they often are, some such words as mountain flower honey, or wild flower honey are appropriate.

If one finds an adequate outlet for honey at roadstands, it may pay not only to offer different size packages, but also comb honey in some form, such as section honey, or cut comb honey, or cobana sections.

Most beekeepers who supply roadstand operators with honey find it ethical and profitable to agree in advance to take back any glass containers that develop crystalization. If comb honey is offered in any form other than in plastic containers, it needs to be wrapped first in cellophane baggies before being place in cardboard containers. Such honey should also have been placed in a freezer for approximately 24 hours in order to assure no moth larvae will be found in the comb when it is sold.

Sales To Packers

Most hobbyists who operate on more than a very limited scale sell most of their honey in 60 pound cans or drums (barrels).

It is obvious that a hobbyist should be just as careful of delivering honey in large containers in as good condition as if it were placed in a small glass jar.

It's good business practice to contact a wholesaler or packer in advance of one's having the crop ready for delivery. True and reliable samples should be provided if desired. Assurance should be given also that the product will be as advertised. And the hobbyist had better know what he is saying. The seller should ascertain in advance what colors and qualities the wholesaler or packer prefers and will accept.

The Chain Store As An Outlet

Chain stores can be a good outlet for the honeys produced by a hobbyist provided his operation is large enough to satisfy the demand fully.

Usually some considerable time is necessary to build up a relationship with the area buyer. He usually already has a satisfactory source. A hobbyist will ordinarily require three to four years of negotiation before he can be assured a chain store company will be a reliable outlet.

The local chainstore operator (manager) can supply you with the name and address of the buyer. It will usually pay to go to see him, after making an appointment, and to take along typical samples of your product and your pack. Your operation must be on a sufficiently large scale to assure him of a steady and reliable source from year to year. If distances are not too great, the packer should periodically visit the stores where his product is being displayed to make sure it has maintained the quality and appearance that were present when it first went on the shelves. When he finds it otherwise, he should replace it with a first-class package—and without charge.

Bakeries As Outlets

An excellent market for honey is the bakery trade. Most bakers use some honey in the making of cakes and cookies, and sometimes even in breads. Honey in these food items serves two purposes: It adds a bit of distinctive flavor that other sweets fail to provide; and since honey is hydroscopic, its use in foods helps to keep them moist for several days longer than when other sweeteners are used. Bakers know this.

But a baker, like any other purchaser of honey, prefers a source that can be depended on to supply the commodity periodically and for the total quantity needed. If one is to be a serious salesman of honey to any type of market—no matter which one— he should strive to be a year-round and reliable source. It goes without saying, too, that his product should be of the quality desired. One minor detail, but a significant one, is to make sure that the honey offered for sale has not already begun to crystalize. Even the baker, who could easily liquify a can of crystalized honey, much prefers to be free of that task.

Sales by Mail Or Carrier

Still another outlet for a hobbyist who intends to continue to remain in the business is the mail order business (or by United Parcel, or some other agent).

Some of the first honey my bees produced went to a man who had built up an extensive and profitable market for

his honey through mail order channels. He was a careful packer (one especially needs to be when shipping honey). Also, he took pains to be marketed. Along with each shipment he habitually included a little folder that gave a rather romantic touch to his descriptions of the various flavors he offered for sale.

For example, when writing about raspberry honey, he told where the raspberry bushes grew, whether they were of a wild or cultivated nature, how far his bees had to travel to find them, and during what dates the blossoms flourished. He did the same for basswood honey, telling what kind of tree a basswood is, how aromatic its blossoms are, and that the bees visit it even after dark, some of them remaining all night — and so on.

We beekeepers know the circumstances under which our nectar producing plants thrive, but many of our customers do not. Don't hesitate to tell them— it adds to the flavor of the honey mentally, sentimentally, and romantically as well as physically.

Of course, a mail order business demands an expenditure for advertising, but a successful sequence of sales readily compensates for that expense.

I'm convinced that a variety pack can provide the right kind of person with a splendid and remunerative Christmas gift business.

Finally, I'd like to say that if the hobbyist is as serious about his sales attitudes and practices as he is about the details of production and processing and packaging, he should try to launch at the beginning into the same markets to which he plans to sell his future honey crops. This is not strictly necessary, of course, but doing so provides a profitable base on which to support his future sales.

But watch the quality of your pack. Label it honestly, and stand in back of it.□

QUESTIONS & ANSWERS

Q. Assuming a primary swarm has issued from one of my hives, what is the relationship of finding it? How far from the hive do swarms cluster and what percentage of swarms cluster until 6:00 p.m.? I should mention that I have plenty of trees and shrubs close by for the bees to cluster on.

A. Swarms usually cluster close to the hive — within 100 yards. It's not uncommon for several swarms to use the same temporary clustering site throughout much of the season.

Unfortunately for the beekeeper an occasional swarm may go directly from the hive to the new location.

It would be difficult to predict what percentage of swarms will cluster until 6:00 p.m. That would depend on the weather, the availability of nesting sites along with other factors. It certainly is not uncommon for a swarm to stay at the temporary hive site for a few hours to a few days.

Jim Tew

Q. After keeping bees for 10 years I am now over-reacting to stings, and the last two almost fixed me. Should I stay out of the business or is there something I can do to improve the situation? **Elwood Groff, Stevens, PA**

A. A *localized* reaction to stings, that is, a reaction such as swelling that is confined to the area of the sting, is ordinarily not considered to be serious, even when severe. A *general* reacton, on the other hand, or in other words, a reaction over all or most of the body, such as a rash, is considered dangerous and is likely to become worse for future stings. A person who is sensitive to stings in this second sense should probably not keep bees or should seek an immunization program from an allergist.

— Richard Taylor

Q. Can I prevent drifting by staggering the hives? **Marshall Slotterbach, Sellersville, PA**

A. You can have as many as three hives in a row without drifting, as the bees easily distinguish them. Almost any arrangement of larger numbers, other than straight rows, will prevent drifting.

— Richard Taylor

Q. I put my bee escape screens on in the fall, and a week later there were still lots of bees in the supers. The escape devices did not seem to be plugged, nor was there any brood in the supers. How come?

A. It was probably too cold, or wet, or both. Bees are reluctant to go down through bee escapes under these conditions.

— Richard Taylor

Q. Why did I lose seven of my ten hives? The inspector found no disease in the fall, the queens were laying well, and they all had plenty of honey. **H.E. Cooper, Orgas, WV**

A. It is impossible to diagnose the cause of winter loss without actually seeing the hives, but it could have been one of the following: (1) lack of ventilation, causing suffocation, indicated by masses of dead bees at the entrance; (2) stores too far from the winter cluster, indicated by bees dead in the combs in one super and honey stores in another; (3) excessive moisture, indicated by a wet, moldy hive, or (4) a combination of these.

— Richard Taylor

Q. How much should you pay the owner for letting you put an apiary on his land?

A. About two pounds of honey each year for each colony.

— Richard Taylor

Q. What purpose does the slatted rack serve, and what are some positive and negative points about it? **Bryan W. Miller, Normal, IL**

A. Dr. C.C. Miller used a two-inch deep bottom board, and invented the slatted rack to prevent the bees from building combs down from the bottoms of the frames. He though the deeper bottom board discouraged swarming. I made up several dozen slatted racks and two-inch bottom boards years ago, still have a few around, but decided they were of little value, having no tendency to discourage swarming so far as I can see.

— Richard Taylor

Q. Our clover honey has a high moisture content this year. We had a drought during the honey flow, so were dismayed to find the high moisture level. August was cool and relatively damp, however. Could the capped honey have picked up moisture while still in the hives? And if we have a dry September, and leave the rest of the crop on the hives through then, will the moisture level go down? **Ann Patridge, Table Grove, IL**

A. Capped honey combs are no protection against moisture, and the honey will become thin if such combs are left even for only a few days in a damp place, such as a basement, or in a barn during wet weather. A dehumidifier can be purchased cheaply, and even a small, portable one removes the moisture from a room or basement quickly, usually in a day or two. I have never known capped honey to become thin while on the hive and under the protection of the bees, even during wet weather. I have, however, heard others report such a problem. The late Carl Killion, in Illinois, found it to be a severe problem in raising comb honey. It is virtually impossible, with ordinary equipment such as a home dehumidifier, to remove excess moisture from honey once it has been extracted. As for leaving it on the hives with the hope that the bees will solve the problem, it is certainly worth a try. I have no experience upon which to base a prediction whether it will work.

— Richard Taylor

Testing Your Beekeeping Knowledge

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

The queen honey bee has two primary functions in the life of the colony. She is responsible for reproduction and produces several chemicals (pheromones) that are important in maintaining the organization of the colony. Since success in beekeeping is so dependent upon one individual, beekeepers are always looking for a source of better queens to head up their colonies.

Some degree of controlled breeding has been practiced by queen producers for many years. Several hundred queens are produced from selected breeder colonies rather than relying on natural supersedure or swarming preparations. Commercial queen producers, however, rely primarily on natural mating, so are only successful in controlling the female line. As a result, progress in developing improved strains of bees occurs very slowly.

How much do you know about the queen honey bee and bee breeding programs? Take a few minutes and answer the following questions to find out how well you understand these important topics. The first eight questions are true and false. Place a T in front of the statement and an F if any part of the statement is incorrect. (Each questions is worth 1 point).

1._____ Queens take annual mating flights to replenish their sperm supply.

2._____ Drone honey bees store their sperm in an organ known as the spermatheca until they mate with the queen.

3._____ All sperm produced by a drone are genetically identical.

4._____ The queen's stinger aids in the laying of the egg in the bottom of the cell.

5._____ A colony producing queen cells in the presence of a laying queen always results in the colony either superseding their old queen or swarming.

6._____ The queen's two ovaries are each composed of 130-186 tubular ovarioles.

7._____ Carniolan honey bees typically build more queen cells than either the Italians or Caucasians.

8._____ Inbred lines of honey bees are difficult to maintain due to reduced colony vigor and egg viability.

Multiple Choice Questions (1 point each)

9._____ The queen honey bee has _____ chromosomes.

A) 24 B) 28 C(32 D) 16 E) 20

10._____ Gas used to anesthetize the queen during instrumental insemination is:

A) nitrogen B) helium C) oxygen

D) hydrogen E) carbon dioxide

Natural queen cells are often selected and used for the purpose of requeening and establishing new colonies. Listed below are various characteristics that are often used in selecting the best cells for potentially highest quality queens. For each characteristic, choose the superior queen cell. (Each question is worth 1 point).

11.a._____ 3/4-1 inch in length

11.b._____ 1-1¼ inches in length

12.a._____ cell surface rough

12.b._____ cell surface smooth

13.a._____ developed from queen cup

13.b._____ developed from modified worker cell.

14.a._____ dark in color

14.b._____ light in color

What will a newly emerged queen do whe she:

15. Encounters another virgin queen (1 point).

16. Discovers capped queen cells (2 points).

17. Finds open queen cells containing developing larvae (Question worth 1 point)

18. Name two ways in which bee breeders obtain controlled matings (specific male and female lines are crossed). (Question is worth 2 points).

ANSWERS ON NEXT PAGE

Answers To Testing Your Beekeeping Knowledge

1. **False** About one week after emerging from a queen cell, the queen is ready to leave the hive and mate with several drones in flight. She may go on two or three mating flights in a period of one or two days. Queens start to lay eggs about two to three days after the last mating flight. Once egg laying has commenced, she will never mate again and only leaves the hive to accompany a swarm.
2. **False** The spermatheca is the organ in the queen in which the spermatoza are stored and kept alive after mating has occurred.
3. **True** Drones develop from unfertilized eggs which contain only one set of chromosomes (16) from their mother. Drones are thus haploid in origin. The processes of recombination of alleles and reduction of chromosome number do not occur in drones. All sperm cells produced by a drone are genetically identical. They are identical to each other and they are identical to the chromosomes in the unfertilized egg that developed into the drone.
4. **True** The sting of the queen is modified ovipositor. The sting is curved and the curvature closely approximates the curvature of the egg. In the process of laying an egg, the sting of the queen and the sting palpi form a groove. The egg passes down this groove and is thus held in position momentarily against the bottom of the cell.
5. **False** Queen rearing is normally the first noticeable step in preparation for queen supersedure and swarming. Neither swarming nor supersedure necessarily follow maturation of queen cells. One or more queens may be reared and rejected before swarming or supersedure occurs, if it does at all.
6. **True** Each pear-shaped ovary in a laying queen is made up of 130-186 tubular ovarioles. Individual egg cells start developing in the tips of the ovarioles and continue development as they pass down the tubules.
7. **True** The number of queen cells produced is highly variable in relation to colony strength and whether the colony is superseding their old queen or preparing to swarm. Carniolan bees typically build more queen cells than the Italians or Caucasians.
8. **True** Even though inbred lines are useful in the development of hybrid bees, they are difficult to maintain. Loss of colony vigor, reduced egg viability and decreased brood production are related to the sex-determining mechanism in the honey bee. One-half of the fertilized eggs fail to produce worker bees if the queen has a sex allele in common with the drone to which she is mated.
9. **C** (32 chromosomes)
10. **E** (carbon dioxide)
11. **B** (1-1¼ inches in length)
12. **A** (cell surface rough)
13. **A** (developed from a queen cup)
14. **B** (light in color)
15. Virgin queens will fight with each other until only one survives.
16. When capped queen cells are found, the virgin chews a hole in the side of the cell and usually stings the developing queen.
17. Virgin queens pay no noticeable attention to open queen cells containing developing larvae.
18. Instrumental Insemination & Establishing Isolated Mating Yards

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

NUMBER OF POINTS CORRECT

20-18 Excellent	**17-15 Good**	**14-12 Fair**

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New Mexico

The New Mexico Beekeepers Association will hold their annual convention on Dec. 6th and 7th at the Downtown Quality Inn, 517 Central Ave. N.W. in Albuquerque, New Mexico.

An interesting slate of speakers will inform on better beekeeping methods and motivate us to become more involved in honey industry activities. Dr. Marshall Levin, Research Leader of the Carl Hayden Bee Research Lab in Tucson will be speaking on the value of the honeybee pollination and research activities at Tucson. Dr. Elbert Jaycox of New Mexico State University, will be talking about queens and other areas of honeybee management. Glenn Gibson, President of the American Honey Producers Convention in El Paso, Texas in January. From the New Mexico Department of Agriculture, Barry Patterson will talk about proposed state policies in regard to the tracheal mite.

The New Mexico Beekeepers extend an invitation to all interested persons to attend. For further information, contact Betty Cole at (505) 869-2841.

The Washington Scene

By GLENN GIBSON,

Minco, Oklahoma 73059

MINCO. As of this date (October 1) the Congress has commenced debate on the Omnibus Farm Bill. The future of our honey loan program will be decided in a few short weeks unless the debate becomes hopelessly deadlocked. In this event the 1949 law will remain in force and our program will remain intact — as is. Since recommendations will not reach readers in time for action, I would like to reminice a bit.

As readers can easily recall, the Secretary of Agriculture has continuously told us since 1981 that the solution to our marketing problem was to terminate the mandatory honey loan program and give him discretionary authority in setting our loan rate. This concession to an unfriendly agency was tantamount to killing the program and in turn bankrupting over half of our producers.

The Department justified their decision to terminate on a mountain of misinformation carefully concealed in a number of official reports from the Economic Research Service. These errors were magnified in hundreds of letters going to beekeepers and members of Congress. The pollination story has been fuzzied to a ridiculous point. Calling their attention to their errors has netted nothing. Seemingly, conclusions came first followed by careful selection of data to prove their point. And this reminds me: "No, No!" said the Queen. "Sentence first—verdict afterwards." *Alice In Wonderland.* Another reminder from the old West: "Try him (in kangaroo court) and hang him legal."

Erroneous Conclusions

In letters to members of Congress and beekeepers these last four years, the Department has concluded—

*** The price of honey will have no effect on the availability of honey bees for pollination.**

*** That the pollination rentals can be increased to offset the negative effects of cheap honey.**

*** That a tiny percentage of beekeepers benefit from the honey loan program.**

***That wild bees do more pollinating than is generally reported.**

*** That pollination is a miniscule part of agriculture.**

*** That high subsidies causes overproduction.**

In a number of ways we have questioned these conclusions, but the replies from the Department have been evasive and show very little understanding of our problems. Beekeepers and technical personnel in the Agricultural Research Service, ARS, know that the above points are not correct. In all letters and reports coming out of the Department of Agriculture nothing has come out over the signature of a recognized entomologist from ARS.

True Pollination Story Is Needed

A true story of honey bee pollination and its value to Agricultural, Wildlife, and the Environment is sorely needed. The recent report of General Accounting Office, GAO, magnified the errors in earlier Department of Agriculture studies. Over the years we have justified our requests for government assistance on the pollination value of the honey bee. In spite of the general negative tone of the USDA reports, I feel that this is still a good sound point in favor of assistance. Consequently, clarifying the story should be a top priority project during the coming months.

The GAO report was critical of the method used to value honey bee pollination. I have no quarrel with reporting the value of crops benefited by bee activity, except that it is misunderstood by nit-pickers. It may never be necessary or possible to attach a dollar value to this service. The evidence alone points to multi-billion dollar value to agriculture alone. When thinking of honey bee pollination for the nation as a whole, I generally rate the service as follows (listed in order of importance):

1. Commercial crops where no cash rentals are involved.

2. Wildlife — both plants and animals.

3. Home gardens and orchards.

4. Beauty of the environment.

5. Cash rental on certain crops.

Pollination of the first four items is a free service from the honey producer. Item five will be governed by supply and demand in limited areas and will not equal the value of any one of the first four.

Statistical Data Needed

It is obvious that we need better data on pollination and honey production so that sound conclusions can be mae. How should we proceed in getting up-to-date figures? In the first place, I would hope that the personnel selected would have a general knowledge of beekeeping. Better data should be another top priority item for the future.

MR. & MRS. BEEKEEPER, some food for thought.□

Research Review

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

Wood Preservatives

Studies conducted by the USDA indicates pentachlorophenol should not be used for protecting hive parts against rot and decay. So far as I can determine this wood preservative is safe and satisfactory for hive stands and wood where bees do not walk or come into contact. When supers were treated with this wood preservative it could be detected in the combs and honey even after two years. Some bees were killed when they came into contact with wood treated with this preservative.

Other wood preservatives that should not be used on beekeeping equipment include creosote and the inorganic arsenicals. The Environmental Protection Agency has indicated it will cancel the registrations for these wood preservatives. This would remove them from the marketplace; however, this has not yet been done and may take some time.

Wood preservatives that are safe for beekeeping equipment include those made with copper naphthenate, acid copper chromate and copper-9-quinolinolate. According to federal law the ingredients must be clearly listed on the product's label. Without treatment, researchers, in Wisconsin observed the decay of bottomboards in three years. I presume the rate of decay would be even greater in the southern states.

Hardin, B.
Wood Preservatives for Beehives. Agricultural Research 33(6):15. 1985.

Greenhouse Pollination Of Strawberries

Over 70,000 colonies of bees are used for the greenhouse pollination of strawberries in Japan according to the report below. I visited some of the greenhouses where bees were being used a few years ago and can testify the strawberries were top quality. The colonies of bees are not large; those I saw had populations of 8,000 to 10,000 bees. They were European honey bees that had been imported into Japan.

Strawberries are said to be self-pollinating by some authorities. However, the Japanese experience is that the number of high grade berries was 40% in a greenhouse without bees and 97.5% in the house with bees. Strawberries are apparently fertilized over a long period of time, as much as ten days under greenhouse conditions.

Editor
Pollination of Strawberry. Bienenstich (7):9. 1985.

The Yellow Rain Controversy

Since the late 1970's, and until about two years ago, the U.S. State Department alleged that chemical warfare was taking place in southeast Asia. Investigators found spots of yellow substance on vegetation in the area. This was subjected to chemical and physical examination and the yellow spots were found to contain a number of pollen grains. One laboratory said a toxic substance was present. While it is difficult to prove or disprove that some kind of chemical warfare had taken place, the evidence for it is weak. In the paper reported below the authors suggest that yellow rain is bee fecal matter.

The primary source of the so-called "yellow rain" appears to be the largest of the four species of honey bees, *Apis dorsata*. This bee builds a single comb often as much as three feet in diameter. It is not uncommon for nests to contain 30,000 to 50,000, and sometimes more bees.

Most of the bees in an *Apis dorsata* nest are not foragers, nor do they appear to do any other kind of work. The nests are always built under tree limbs or rock cliffs. Since the nests are exposed they need some kind of protection and this is given by the bees forming an insulating curtain, two or three bees thick, over the surface of the nest.

One fact, common to most yellow rain reports, was that it comes in showers. This was difficult to understand. However, three of the persons who wrote the report below were caught in such a shower of fecal matter. They report that at a certain time of day large numbers of bees left the nest and all appeared to void their fecal matter within a relatively short period of time, a matter of minutes.

In our country there are certainly a great number of complaints about bee fecal matter, especially in the early spring when bees take their first flight and have quite a quantity of feces to void. However, this usually takes place over a period of several hours, and nothing like a yellow rain shower, is as reported from southeast Asia, ever occurs.□

Seeley, T.D., J.W. Nowicke, M. Meselson, J. Guilleman and P. Akratanakul
Yellow Rain. Scientific American 253:128-37. 1985.

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Bee Talk

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

We have now completed our second season of beekeeping in this country with the accompaniment of the tracheal mite, which for awhile was causing such hysteria in some quarters that we were supposed to expect the possible collapse of beekeeping across the entire continent unless swift and draconian measures were taken. It didn't happen, did it? Those draconian measures were taken, veritable armies of bee inspectors turning out to "eradicate" the mite here and by "depopulating" (that is, killing off) hundreds of colonies, there only to find it turning up at new, distant, unsuspected locations. I long ago lost track of the states where it has been found. The mite seems to be just about everywhere. I suspect it has been with us for years, unnoticed. In any case, it is going to be with us from now on, no doubt of that. The frantic attempts to "eradicate" it here and there seem to me pathetic and comical. We still read now and then of widespread "depopulation" programs within some states. It is not clear how they think they can find every infected colony, how they plan to "depopulate" all the bee trees that the mite has gotten into or, especially, how they are going to get the mites to stay on the other side of their state borders.

I decided quite awhile ago, that most of the alarm about the tracheal mite was little more than hysteria, born of ignorance and misinformation, and this view of the matter has been pretty much confirmed now by the scientific literature on the subject and by personal correspondence with Dr. Leslie Bailey, of the Rothamsted Experimental Station in England, who has researched this matter for over 30 years and who is everywhere recognized as the authority on it.

I have to date not learned of a single colony of bees that has been destroyed by the tracheal mite. We were supposed to expect that, once the mite reached our borders, colonies would be perishing all over, perhaps across the entire continent. We were supposed to expect a disaster similar to the alleged spread of the so-caled "Isle of Wight" disease in the British Isles early in this century. And there are in fact still people who, in spite of the findings of Dr. Bailey and his associates, think that the "Isle of Wight" disease, as it is called, and the presence of tracheal mites, are one and the same thing. The truth appears to be that tracheal mites are most likely to be found in colonies that are under severe stress, such as confinement caused by long periods of inclement weather, and which are therefore vulnerable to viruses and other disorders. The tracheal mite, in other words, seems to be a result of a stressed and weakened colony, not the cause of it.

Journalists have, as usual, added fuel to the hysteria, by their "stop the press" headlines and their lurid terminology. One clipping refers to this pest as the "killer-parasite," and vividly describes the threat it poses to all the bees throughout the state of Maine. Another quotes the governor of another state, who refers to the "imminent peril" posed by this mite. Journalists we should remember, like to have people notice what they write. The way to ge them to notice is to scare them. And one way to scare them is to reach for such words as "killer". But it becomes sad indeed when state officials and bee inspectors, without a shred of reliable evidence or scientific data, respond as they have been doing to such reports.

The expression, "acarine disease," which is still quite common, even, sometimes, in the writings of person who are rightly regarded as authorities in apiculture, is highly misleading. No disease has to date been traced to this mite. The tracheal mite is a parasite. It is not, in itself, a disease. Sometimes mites and other parasites do cause diseases of various kinds, in human beings and other organisms. Rocky Mountain fever and malaria are examples of diseases in humans carried by parasitic arthropods or insects. But no one has found any disease of bees that is caused by the tracheal mite.

The tracheal mite is parasitic only upon adult honey bees, and is transmitted from one bee to another only by contact. Only young adult bees were susceptible to them. They shorten the lives of the individual bees they attack, but they do not, otherwise, kill them outright. But more important, they do not kill, or even seriously threaten, colonies of bees that are otherwise strong, that is, populous and free of disease. A colony containing infected bees appears perfectly normal to the ordinary beekeeper. The bees of such a colony forage, pollinate, gather nectar and store honey crops like any other. Tracheal mites infecting some of its members become a problem to the colony, and hence to the beekeeper, only if conditions unrelated to these mites become seriously adverse. Thus, if the bees are long confined, as they are during the winter, then the mites are likely to spread within that colony, since the conditions for such spread are then favorable. If a winter is particularly severe and wet, then the colony may die out. This is most likely to happen in late winter. Then when its members may be found, on inspection, to be heavily infested with tracheal mites, effect comes to be mistaken for cause, "acarine disease" becomes the diagnosis — and the error is perpetuated.

Dr. Bailey has concluded, on the basis of observations of hundreds of colonies over many years, that another condition conducive to an increase of these mites is poor foraging conditions. Thus if nectar sources are few at a given time or in a given area, or if that area is over stocked with bees, or if both conditions occur together, then again the bees are in a stressful condition favorable to the mites. Of course such conditions are more common in England than in the major honey producing areas of this country. Hence, if foraging conditions are good, or in other words, if there are decent honey flows and the competition for them by the bees is not too severe, then the degree of mite infestation

rapidly decreases, to the point where it is not a serious problem. The number of affected bees within a given colony diminishes as the colony builds up its foraging force and, in a word, the tracheal mite ceases, for all practical purposes, to be a problem for the beekeeper. Indeed, he is likely not even to suspect its presence.

The tracheal mite has indeed been a source of problems for the American beekeepers who depend on moving their hives from state to state, but the actual losses have not been from this parasitic mite, but from the misguided efforts of the authorities in their response to it. A salaried agent of the state, with the power to impose quarantines, knows that his only salary check will arrive on schedule. He need not even give it a thought. But life is not that simple for the beekeeper whose very livelihood, and the well-being of his family, may depend upon his being able to move his bees from place to place on schedule, as well as the fruit growers who depend upon him for pollination. It would be desirable, then, if state-imposed policies were arrived at on the basis of authoritative and scientific evidence, rather than anecdotal evidence and wildly distorted journalisitc accounts.□

STATEMENT OF OWNERSHIP

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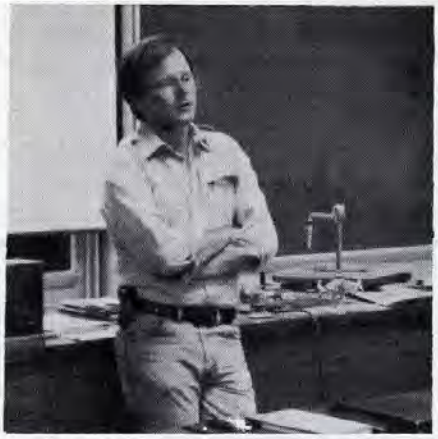
The Solitary Beekeeper



By DR. JAMES TEW.

The Agricultural Technical Institute Wooster, Ohio 44691

It's not new information to most beekeepers that our industry is divided into several areas. Honey production, honey packing, crop pollination, queen and package production, beekeeping equipment production, hobby beekeepers and disease inspection personnel are the main groups. Each of these groups is obviously deeply involved with honey bees as an occupation, yet each area has very different requirements.

In their own way, bees are a vital component of our agricultural system and each component of our industry comes together to form one of the most advanced bee industries in the world.

Now through a series of unfortunate events — namely mites, hybridized bees ("Killer Bees"), imported honey, insecticides along with other problems, the U.S. bee industry is under the greatest stress that its been under in recent years. It is unfortunate that in the face of these challenges some beekeepers fail to accept the importance of all the components functioning together. Time and again, I've had conversations with beekeepers who breath sighs of relief to hear that hybridized bees will not survive well in the colder climates of the U.S. Hence, beekeepers in cooler climates are "safe".

As far as mites are concerned, we will simply produce queens in the northern states and introduce them to hives in the fall. There's even consideration given to moving queen producing operations to U.S. territories and islands in an effort to keep queens mite free. Suggestions such as these are reasons for serious concern for queen and package producers in the warmer climates in the U.S. The southern U.S. in particular has specialized to a great degree in queen and package production. The queen industry in the south is well over 100 years old. During that time, selection and development have been carried on that should not be considered lightly. Each season many millions of dollars worth of queens are sold both nationally and internationally. The queen production specialization that has resulted in the warm climates (mainly the southern U.S.) description maybe taken two ways: (1) As an undiversified component of the bee industry — consequently of questionable value or (2) as part of the industry that selects and breeds productive queens and makes them available at the best time of the year for many other beekeepers. It is not impossible to move the queen industry to other areas, but it must be understood that such a move would be extremely disruptive. The availability of queens would decrease and the cost would certainly go up for a period of time.

Package and queen producers are not in this situation alone. Honey producers are also feeling a severe pinch. As every beekeeper knows the Honey Price Support Program seems to be under constant review. The influx of imported honey never ceases. Should we consider even for a moment, as some major U.S. officials have suggested, that we should be getting our honey from international sources if U.S. producers can't compete? That would just add to this whole mess. Then consider the honey packers; they're caught in the middle. Should they buy the cheaper imported honey and keep consumer costs down or do they try to stay with the higher priced U.S. honey when they know other packers are processing the cheaper imported honey. Even the beekeepers specializing in crop pollination services are not untouched. One of the major bee supply manufacturers has estimated that a significant decrease in a production market by any fraction of the bee industry would result in equipment costs rising since production would be for a smaller market. Production of some pieces of equipment may actually be discontinued. Consequently, pollination specialists would be faced with trying to keep rising costs down while trying to convince customers that the increased costs are worth the investment.

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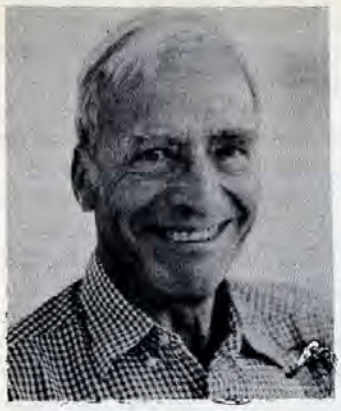

SIFTINGS

Charles Mraz
Box 127
Middlebury, VT 05753

It is of great interest to me to get "Fan Mail" on occasion, such as that by Wade B. Lawrence, D.V.M., page 129, August 1985 *Gleanings*. I do not know what Dr. Lawrence means by "Unsubstantiated claims" that I make about honey. Does he mean they are not verified by "Scientific" studies published in "Scientific" publications? If that is his identification, then that is true. My statements are based on 65 years of commercial beekeeping and of great interest in Apitherapy, the study of Theraputic and Physiological effects of bee products of man and animals, from personal experience.

It is not all my own "personal" experience, but that of working with many doctors, veterinarians, researchers of many institutions. To name a few: Dr. Bodog F. Beck, father of bee venom therapy in the U.S., 1935-1942. He is the author of two classic books, *"Bee Venom Therapy;;* and *"Honey and Your Health"*. You should read them, Dr. Lawrence.

1950-1980 I have been much interested in the anti-carcinogenic properties of bee products from many years of observation and experience and knew Dr. C. Chester Stock of Sloan-Kettering Institute for Cancer Research when he became head of Chemo-therapy in 1950. I was invited to his retirement party in 1980 at SKI. In that time I did some interesting experiments of my own on mice implanted with Sarcoma 180 tumors by SKI. For me it was fascinating to see these virulent, toxic tumors under Apitherapy encapsulate, slough off and the mice make perfect recoveries. In one batch of 29 mice, 50% permanent remission. Unfortunately, there was little interest, mainly because I did not have a few million dollars to finance such a "Scientific Study". Research is extremely expensive and even SKI cannot do research for which no funds are alloted.

For this reason, you will NEVER see any research done on natural products such as honey. Today 70% research funds are given by the drug industry and other private businesses, usually for products in which they have a financial interest. Only 30% of research funds are private and public for which you can be sure will never be used to research apitherapy products. We have tried for 50 years to have clinical research with bee venom therapy for rheumatic diseases with no success whatever. Even without this "Scientific Research", bee venom therapy is still just as effective as when first used by Dr. Anton Terc of Marburg, Austria over 100 years ago. I have worked with a doctor in Montreal for many years with bee venom therapy; Dr. Joseph Broadman of New York, author of *"Bee Venom the Natural Curative of Rheumatism and Arthritis."* Also many years with Doctors P.H. O'Connell of Conn. and Dr. Raymond L. Carey of California, two former students as I was of Dr. Bodog F. Beck in the 1930's.

In recent times, the only research in bee venom therapy was that funded and directed by Glenn B. Warren. I helped him get started on this research over 20 years ago and during that time research was done at Cornell University under Roger Morse and Allen Benton. Penn State on valuable breeding bulls that develop arthritis of the hind quarters early in life, making them useless to produce semen. New York University Hospital, bee venom therapy on adjuvant arthritis on rats did excellent work.

The main work of the Warren Foundation Research under Glenn Warren was with Walter Reed Army Institution for Research under Lt. Col. James A. Vick, Robert Brooks, Maj. von Bredow, etc. Much work was done on the fractionation of bee venom by William H. Shipman of U.S. Navy Radiation Defense Lab and under Sea Research. Shipman and Cole revealed; that bee venom protected mice against lethal doses of radiation. Shipman was also one of the first to use bee venom therapy on horses for ringbone and other arthritic problems. Some vets today are working with bee venom therapy and apitherapy, feeding horses pollen, honey etc.

At Walter Reed working on dogs, rats and monkeys it verified the findings of Prof. Artemov of University of Gorgy, Russia that bee venom stimulated the cortisol level of the blood five times above normal levels for two weeks. Extensive tests were also done on arthritic dogs that appear to respond as well to bee venom therapy as do humans. Some of this work has been published though most "Scientific Publications" have turned down the manuscripts, and were published in England and written up by those at Walter Reed working on the project.

Through the years I attended conferences and meetings on apitherapy in Russia (1971) Romania (1976), Israel (1980), Acapulco (1981), Sweden, Czechoslovakia, Germany, and so on, through these years.

Recently, an Immunologist, Dr. Stan Somerfield of New Zealand, doing two years of research at the Montreal General Hospital on Immunology, did most interesting work on, "Bee Venom Inhibits Superoxide Production by Human Neutrophils." Since superoxides and free radicals are implicated in many degenerative diseases involve the immune system of the body, this work should be of great interest in future research if there ever is any. Providence College is working on Colon Cancer with bee venom therapy.

Continued on next page

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Also a medical student at Wright State University is working on the effect of bee venom therapy on T suppressor cells, also involved in the immune system.

What little research is being done verifies what we have known for many years, bee venom does indeed have a potent influence on the immune system of the body as do all bee products. These include natural honey, pollen, royal jelly and propolis.

I have collected large quantities of pure bee venom for some 40 years now and supply most of it used in research. Through this I have been involved with the work of Laurence Lichtenstein and Valentine of Johns-Hopkins in Baltimore in their work getting pure venom adapted as an allergin for the treatment of hypersensitivity to stinging insects. Working with Dr. Karpus of FDA, Division of Biologics Standard, I helped them establish a standard of identity of pure bee venom used to treat hypersensitivity.

In addition to this of course is my 65 years of personal experience, treating several thousand people. So if you want to comment on my "unsubstantiated evidence" of 65 years of experience, what evidence do you have to prove me wrong? How many sick, vomiting, babies have you put on a honey milk formula and seen them become well almost immediately? Forty years ago, Dr. Clark of Burlington used honey milk formula on not only infants but on premies in which he made a specialty. "In four months," he told me, "they are normal weight".

How many arthritics have you seen become well after years of failure with drugs? As a Vet, Dr. Lawrence, you are in a wonderful position to learn something about Apitherapy. I am astonished at how many dogs today become victims at an early age of arthritis and cancer, from what I am told by dog owners. Sixty years ago when I had dogs, we never bought dog food, we were lucky to have enough money to buy our own food. Our dogs ate what we ate, what people today throw in the garbage. Plus we always got nice fresh juicy bones for nothing from the butcher with fresh grisle, meat and bone marrow, also for nothing along with very cheap liver. We never heard of arthritis or cancer in dogs. They just died of old age.

Do you suppose, Dr. Lawrence there may be a parallel between commercial dog foods and commercial infant formulas? No, Dr. Lawrence, I am not against infant formulas because they contain corn syrup, it may be more healthful as a simple sugar than the disacharide common sugar. What makes infant formulas detrimental to health as you stated, they are sterile, a "dead" deficient food. As a vet you should know that, it was now over 100 years ago when sailors went on long voyages with "sterile food" they developed scurvy, a fatal disease. If the sailors ate fresh fruit, scurvy disappeared, a protective factor in fresh foods we know as vitamin C. There are many such protector factors in fresh foods of which we as yet know nothing. Have you read *"Folk Medicine"* by my old friend D.C. Jarvis, M.D.?

Recently, even the Cancer Society is recommending eating bran and fresh vegetables to prevent colon cancer! They say it is not only the fiber, but also that it contains an anti-carcinogenic protective factor that we yet know nothing about, until we learn a lot more about the complex subject of immunology.

Yes, Dr. Lawrence, Mother Nature did make cows milk for calves and human milk for babies. The problem comes when the mother has no milk for her babies, as was the case with my five children. As a vet you have heard of "Foster Mothers" in animals? It used to be a common practice to have different farm animals nurse from another species of animal. You know there is little difference in the milk of mammals and their use by different species has been used for many centuries. Mother nature is a smart girl and did a good job making us adaptable to all sorts of circumstances. So adaptable in fact, that human secretions (insulin) is being produced by bacteria. Even common bread mold that produces a material to protect the mold against bacterial invasion, is being produced and used for years by doctors and even vets. It is called pennecillin. How do you justify this horrible situation using a secretion made by mold itself to protect itself, and doctors use it to protect animals and humans against human disease. You still believe mold anti-biotic is only good for bread mold?

Next time you comment on my unsubstantiated statements Dr. Lawrence, please be fair and back it up with evidence from you own experience in your animal practice. When you treat a couple hundred dogs with arthritis, cancer or other deficiency disease, with apitherapy; natural honey, pollen, royal jelly, bee venom, etc., then you can say "from my experience with so many animals over so many years I have found this evidence to contradict your statements." Then your statements would be worth a lot more than the "two cents" you quoted at the start of your article.□

Continued from "The Solitary Beekeeper, page 589

If the industry were weakened by any of the above "Doomsday" scenarios, stress on the state and federal apicultural programs would certainly increase. One does not have to look far to find a land-grant university that has changed old, established beekeeping teaching, extension and research positions to insect ecology or some other related area. As for the federal labs — it seems they are constantly challenged to justify their usefullness on an annual basis. We need our research people now more than ever.

We are a small specialized industry. We simply must function together and not be too quick to write off another segment of the bee industry. For example, there's nothing wrong with beekeepers producing queens in the northern states but don't predict a wholesale move of the queen production business to the north or some other area. Neither is it wrong for a packer to establish foreign markets to hedge against future U.S. crop failures. Queen producers need to keep informed about the status of the Honey Price Support Program. The welfare of many of their customers depends on it.

All beekeepers are hopefully linked in this business together. Let's work toward keeping our industry the best.□

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THE REVOLUTIONARY NEW METHOD IN QUEEN REARING

by HENNING U. SPITZNAGEL 22930-48 Avenue Langley BC

Every beekeeper is aware of the importance of a strong and productive queen in each of his colonies in his apiary. It is the key. The beekeeper can influence the strength and productivity of his bees, but it is also necessary, that he has the control over the reproduction of queen bees with the highest quality. To fulfil this task, the beekeeper can't rely on the swarm control method or supersedure queen, produced in the bee colony, he has to select and control the queen production in the earliest stage, first by selecting the breeder queen, second by selecting the egg or larva used for the queen rearing process.

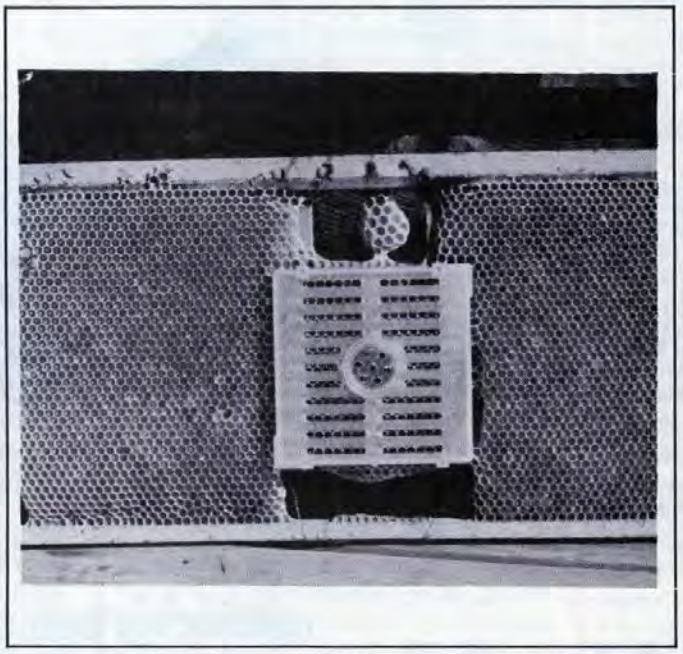
It is common practice in North America, that queen producers transfer the young larva by means of a grafting tool into a special queen cell and to give this queen or cells to a strong bee colony to nurse the larva with royal jelly and build the queen cell.

International research proved, that there are certain criteria in the early stage of queen rearing.:

1) It begins with the selection of larva. The nursing bees feed the larva according to her appetite and as more of the royal jelly the young larva is imbedded in, (by evaluation of larva with the same age) as bigger the young queen will develop.

2) Another important factor is, that only 36 hours old larva should be selected as queen larva and that means we must know the exact time the egg was laid into the cell, (plus or -2 hours).

The Jenter Queen Rearing Box after arrival, here with Queen holder clamp.



The Jenter Box mounted in a standard frame and already drawn out.

3) Also very important is, that the young larva does not come in contact with harmful tools and will not be without the needed food source for any short time during her development.

Of course, these criteria would make it quite impossible for the majority of beekeepers to rear their own high quality queens without strong optical equipment and a calm hand, to select and transfer the larva based on the method of grafting the larva once developed from the beekeeper Wilhelm Wankler.

A successful European beekeeper believes that he must not only raise his own queens, but he also should have at any time during the year for four of his full size colonies a spare queen in a nucleus colony available, because he cannot afford to have a single colony queenless for any short time during the season.

All this led the oldtime beekeeper Karl Jenter in West Germany to the invention of his new patented TRANSFER METHOD. The Jenter Queen Rearing Comb, a 4″ x 4″ plastic box with foundation, queen excluder and 90 removable cell plugs permits the beekeeper, whether for his hobby or commercial operation, to produce the best possible queens from his breeding stock without any other expensive tools.

The Jenter Queen Rearing Comb is easily mounted into

Langstroth standard or Dadant frame, by cutting out a section of the worker comb. The foundation of 16 square inch is usually drawn out in two days and through an opening in the excluder cover the breeder queen will be introduced and confined into the Jenter Comb.

A good queen will fill the comb cells within two or three hours with eggs and the nursing bees will provide their service, while the queen is already released. On day four the beekeeper can sort out all the poor larva and remove them from the cells, while on day five the removable cell plugs with the attached larva in royal jelly will be pulled out and plugged into the queencell starter cups and then connected to a bar with 18 mm holes pre-drilled and hung in a queen cell frame into the prepared starter and later the cell builder colony.

Because the young larva will remain in the original royal jelly, the nursing bees in the starter colony will accept them right away. The so produced queens are anatomically perfect and later highly productive.

Describing the new Jenter method of queen rearing may sound abstractive, but the hitherto success was so remarkable and beekeepers in Africa, Austria, Brazil, Germany, Hungary, Russia and Switzerland are filled with enthusiasm.

It is also easy to understand how helpful the new Jenter Method is for the older beekeeper, who probably could not continue the grafting work because of the problems with his eyesight, that was also the forcing power for Karl Jenter, the active beekeepers and queen rearer.

The Canadian Honeybee Research Assoc. of B.C. tested two of the new Jenter Queen Rearing Combs in various hives and it proved, that the simple Jenter Method will allow also the total newcomer in queen rearing to produce top quality queens from the technical point of view. Of course, the basis remains a superb breeder queen and a well established drone population, but to compete against imported queens from areas with extreme different climate and season cycle the top colony in your apiary may produce superior young queens to improve production and above all, it is fun and a new excitement in beekeeping.

But what does it cost, to start your own queen rearing apiary? The basic costs for the beginner are well under US. $70, and that means the beekeeper with approximately 5 to 20 colonies wants to replace his older queens and restock his winter losses, or in other words, he only will produce young queens for his own purpose, he buys the Jenter Queen Rearing Comb and prepares himself a few queen cell bars with 18 mm holes for the starter cups and mounts them into empty frames, he also prepares some spare bottom boards and covers from scrap plywood and lumber, just enough, that he has a separate one super hive for each queen he wants to produce and when the time comes, he locates the overwintered queens and takes three frames with bes, but without the queen into each of the prepared new nucleus hives, closes in the bees with screen wire and places them for three days in a dry, dark and quiet basement room (don't forget the feeder).

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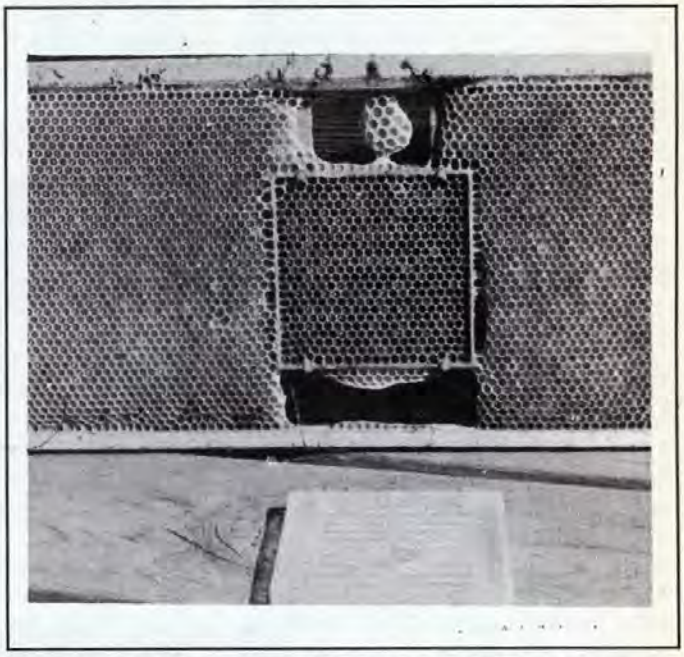
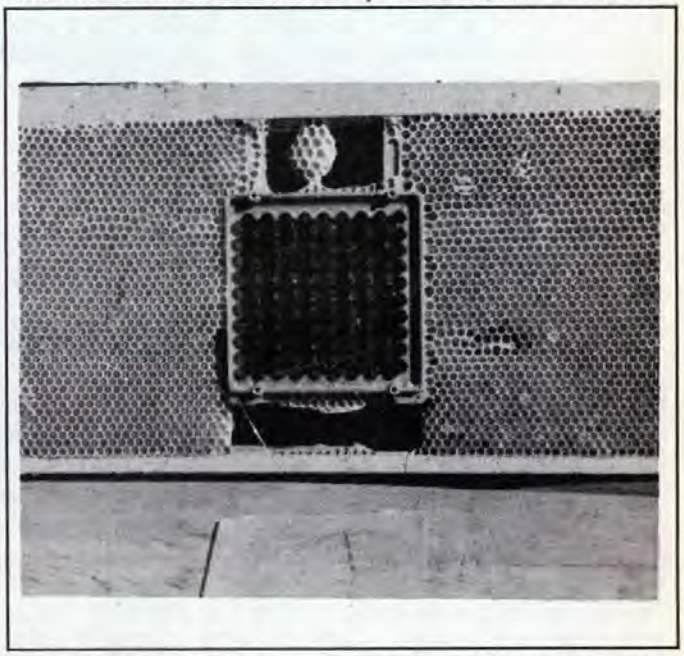
After this time the small hives find a place outside the yard and can fly free. When the new queen cells are ready for hatching, they will be introduced to the queenless nuclei (but first check for supersedure cells) and after two weeks or so make sure, that there is a queen in the colony and as soon as she is laying, you are in business.

Of course, if takes two years when you only produce five queens a season, to pay off your investment, but don't forget, you don't import yourself some trouble of unwanted little mites, assuming you don't have them already.

But if you are thinking of ten or more queens in one season, your investment is already paid in full with the first hatch and there is still the possibility, to sell young queens or complete nucleus to your friends and neighbors, or how about producing royal jelly.



The breeder frame with the queen includer removed.



The rear side of the frame, the cover is removed, the plugs are easy to transfer.

Hobby Beekeeping: Keeping It Fun

by MARK PHILLIPS RD 3, Brown Road Cuba, NY 14727

Many of us who become beekeepers as hobbyists—because we wish to celebrate spring, walk in flowery meadows during summer, make a sweet fall harvest, and because, well, we love the birds and the bees—tend to overdo it. We begin with perhaps three colonies and end up with perhaps thirty, our hobby part-time business. Some of us, though, just aren't cut out to be businessmen, and when the ring of the cash-register drowns out the hum of the hive, something essential is lost. For the hobbyists, one thing is essential: beekeeping must above all remain a pleasure. Therefore it is wise to keep in mind that just because three colonies are great fun, thirty swarms will not necessarily be ten-times the fun; in fact, thirty colonies may give no fun.

My own experience can serve as an example. I became interested in beekeeping while working at a home for boys which stressed work and self-reliance. A retired farmer ran the work program, teaching boys to produce maple syrup, some carpentry, to tend chickens, and beekeeping, among other things. I don't know how much the boys gained from the program, but I, at least, learned a great deal and today tend chickens, make maple syrup, and of course keep bees. While working at the home I purchased equipment and bees by mail, and started a colony; the next spring I bought another colony already set up. I was hooked: each evening, as I returned home from work, I made a "beeline" to the refrigerator and then to my bees, and there would sit and observe the happy activity of the hives, beer in hand and my wife in the background yelling about my rudeness. That summer I opened and examined my colonies far too often, out of pleasurable curiosity, and caused the supersedure of a good queen. Still, that fall, I took off my share of delicious comb honey, and never tired of boring my friends with detailed accounts of hive organization and bee anatomy. Then, that winter, I decided: I'll buy an extractor and expand, for if two hives are fun, ten will be more fun, and while I'm at it I'll make some money.

So the next spring, through divisions and catching swarms, I began expansion. By the following fall, I had several colonies, but somehow, beekeeping wasn't as much fun as it had been. When I thought about it, the reasons became clear. Where previously swarming did not worry me as long as I was left with 50 pounds of honey for myself, now swarming was a disaster to be prevented through great labor. Instead of leisurely enjoying my bees when I came home from work, I would put my ear to the hives and listen for the telltale piping of swarm-bound queens, and examine entranceways anxiously for signs of crowding or swarm preparation. Or would open my hives not out of curiousity, but out of worry, checking for signs of dreaded diseases. Or would re-queen, replace comb, cut queen cells, or search bushes for swarms to be caught and re-joined. Pulling honey, which had been a reward, bacame a chore—my little extractor straining with a thousand pounds of honey, and my little pocketbook preventing me from buying a larger extractor. And then, for a non-businessman, the worst part—selling. I live on a remote dirt-road, so sales from my house were not many. And not being much of a businessman, I could not accept money from my friends, neighbors, and relatives, giving my honey to them instead, and so, out of embarrassment, they stopped asking to buy honey and probably took their business to someone who would take money. Finally, I found two cider-stand operators to sell my honey for me, but one cheated me and the other pushed my product into the background. At the end of the season, I was measuring success in terms of a small profit, not in a relaxing education and pleasure. I knew it was time to again become a hobbyist.

These days I keep three two-story colonies. I've gone back to enjoying my bees. Unless all of my colonies show signs of swarming, I do nothing: to me, there are a few sights as awesome and beautiful as bees peacefully roaring out of the hive with their queen, and there is something satisfying in knowing that they will settle in a hollow tree somewhere and pollinate a wild meadow. I keep 100 pounds of honey for my own use, and any extra is fed back to the bees or given away; these days, since I'm not pretending to be a businessman, friends are glad to accept my free honey.

Here's my advice to the hobbyist:

1) If you're considering expanding, first ask yourself why you became a beekeeper to begin with. Was it to make money? Well, even many old-pros with hundreds of colonies and the best equipment are losing money these days, so perhaps you should consider going into the computer business instead. No, you say, you don't really want to make money off beekeeping, but you need to pay for your equipment to support your hobby. Well, OK, but be careful. You'll have to assess your potential market closely. Remember, foreign honey, inferior or not, is being sold cheaply in the supermarkets, and what's more, the government is giving honey away for free to the needy. Remember that customers expect to be able to buy all the honey thay they need, and yet, you'll be stuck with any extra. My suggestion is that you pay for your equipment, and then, unless you've enjoyed the business part of beekeeping, go back to being a pure hobbyist.

2) Three hives make a good number—enough to insure against winter or swarming losses. One hive will worry you—it's all you've got. But more than three are more than you need, and a bother to the strict hobbyist.

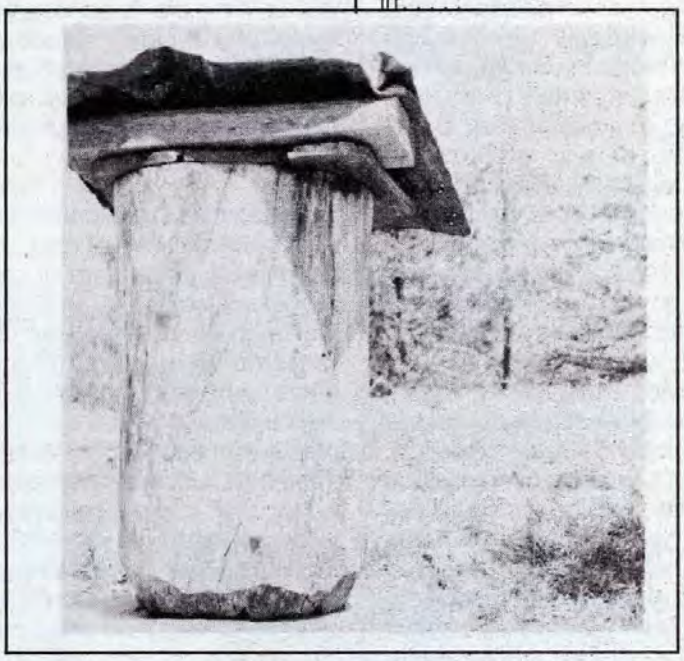
3) Remember that most of the literature on beekeeping was written for those beekeepers who are in business, with an emphasis upon profitable production. Leave the Herculean swarm-controlling, chemicals, experimental methods, and governmental lobbying to them. Oh, you can learn by reading, but you will learn most by watching, listening to, and smelling your hive. You will learn if all is healthy inside, if swarming preparations are under way, if your queen is laying well, how much and what type of surplus honey is being produced, and much more—and after a while, you'll learn to tell these things without even opening the hive. . . . Just you, a beer, bees, sky, and flowers. . . . . and maybe your wife yelling at you in the background. . . . .

Have fun!

Old Time Beekeeping In Kentucky

by ARNOLD & CONNIE KROCHMAL 119 Bell Rd. Asheville, NC 28805

On a recent trip to Kentucky we stopped off at the Cumberland Gap National Park, Middlesboro, Kentucky, and chatted with Frank Doughman, the ranger on duty. We commented that we were interested in old beekeeping information, and Frank helped us locate an interview with an old beekeeper some years ago, as well as finding a negative of two old bee gum hives in the files. A summary of the interview follows. The source of information was a local beekeeper, Jesse Gibbons.



Old-Fashioned Bee Gum

Jesse noted that his dad would get his bees by going into the forests and find a bee tree, cut it down, and bring in the colony. When a new bee gum was needed Jesse's father would go out into the woods, and find a hollow tree, cut it down, saw off what he needed, haul them into the farm and dress out the inside.

He commented that his dad didn't like to rob the bees, so his older brother Lige would do it each year about the 10th of June. One of their methods was to go out onto the mountain, cut down a tree with bees in it and cut the gum from that. At other times they would find a swarm in a tree near the homesite, and would try to capture it. They would take a bee gum, put a top on it, put the gum on top of a flat rock, "get it down where they was at and drive them right in there". Another way was to wait until afternoon, about 3 or 4 o'clock, '. . . . . and you take a spoon, cut anything and just dip 'em off too quick. . . . they will fight back, stang you. . . . . you can take a smoke and crowd 'em pretty heavy, drive 'em in. . . . . "

A touchingly beautiful look back into time when beekeeping was part and parcel of the every day life of the mountain dwellers of Kentucky, as it still is in many areas. □

Garlic, The Insecticide

by MINDY KIRCHMAN & ROBERT N. MERZ, Sr. 1182 N. Reed Ave. Reedley, CA 93654

EDITOR'S NOTE: Because of beekeeper concerns about insecticides we thought *Gleanings* readers would be interested in this natural alternative.

The nemesis of every nurseryman and organic gardener is the horde of insects forever lurking nearby, ready to share the bounty of the earth. For many horticulturists the only means available to protect the fruits of their labors, be they blooms or food, are the commercial insecticides now on the market.

The commercial insecticides sometimes have unpleasant and unhealthy side-effects which range from staining blossoms to making food crops inedible for periods of ten days to two weeks. In addition, they are indiscriminate killers of insects, eliminating the beneficial as well as the destructive ones. In other cases there are possible deleterious effects on field hands who have been sprayed inadvertantly, or who have worked fields too soon after they were treated.

This problem was a matter of concern to some senior citizens who were enrolled in the Landscape-Horticulture class at King's River Community College, Reedley, California. The class consists of 40 members who are assigned specific plots of garden space. Each week a how-to lecture is given, and the enrollees can work their plots, any time, at their convenience.

Some members of the class were opposed to using commercial insecticides, so alternatives were sought. A coterie from the class gathered as much material as they could on organic methods of protecting their plants from insect damage. Some of the class planted Marigolds (Dwarf French are the best), Nasturtiums, Rosemary, chives, onions, and garlic among their vegetables, berry cane, and flowers to discourage the insects.

After quite a little research, and considerable experimentation, the authors taught some of the members of the class to make a garlic spray from the bulbs they had grown. Several ounces of finely minced garlic was soaked in two teaspoonfuls of mineral oil for at least 24 hours. This is then added slowly to a pint of water in which ¼ ounce of Palmolive sap has been dissolved. After stirring well, strain the resultant liquid into a glass container. One to two tablespoonfuls of this garlic oil added to a pint of water will eliminate a number of insects from the plants. If the plants are sprayed every ten days or so, many insects will avoid them. Different insects required a little more, or a little less, of the garlic oil added to the water when mixing the spray.

It seems as if garlic oil is the single most powerful insecticide that can be used safely in the yard or garden. In our experiments, some of the spray was made from garlic that had been grown in the garden. Other batches were made from a sample of garlic concentrate donated to the department by Triarco, Inc. of Patterson, N.J. Their best concentrate sells for $75.00 per pound, and the smallest unit sold is five pounds. Five to twenty drops of this concentrate was added to a pint of water in which a small amount of Palmolive soap had been dissolved.

To date, half a dozen members of the class pooled their information with the authors. The results of the class experimentation is as follows. Killed on contact with the garlic spray were cabbage moths & cabbage loopers, earwigs, leaf-hoppers, mosquitoes and their larvae, white flies and some aphids. Cabbage moths and mosquitoes fold their wings and drop when hit with the spray. As little as three or four drops of garlic concentrate will rid a child's five foot wading pool of mosquito larvae in a matter of minutes, but will harm neither plants nor fish that might be therein.

Those insects which succumb to a minute or less are the house flies, June bugs, yellow swallowtail butterflies, and squash bugs. Those who die in one to three minutes include the small cockroach, lygus, and the slug. Others may take ten minutes, or a little more, depending on size, and these are large cockroaches, & and dreaded tomato horn worm.

Neither lady birds nor the Colorado beetle seem to suffer harmful effects from garlic spray. Some red spider mites were midly irritated, some fell from the plants and left, while others died. Grasshoppers and grapeleaf skeletonizers were not bothered by the spray. Red ants and sow bugs became very irritated when sprayed, but they did not die from the experience.

As time and money permits, sprays from our home-grown garlic, as well as that made from the commercial concentrate will be used on any and all insects that invade the senior citizens garden plot. We plan to disseminate our information to any interested individuals or groups. If there are others who are using garlic in this fashion we would be most happy if they shared their information with us so it could be incorporated with other material in a subsequent report.□

A PARALLEL TWO QUEEN HIVE

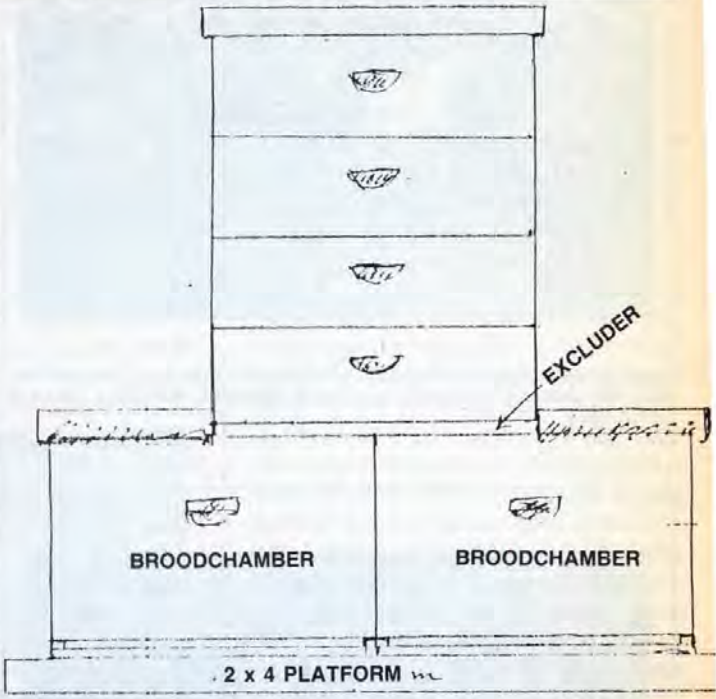
By WALT CRAWFORD 3569 Amherst Ave. N. Massillon, Ohio 44646

There are many advantages to having colonies arranged in pairs. A platform made of 2 x 4's provide good stability for tall heavy hives. When spaced about six or seven feet apart, each hive is accessible at the side. Each offers some protection to the other from the weather and can be easily packed together for winter if desired. If one is moved, the field bees will be absorbed by the other, giving it greater strength. Bees more easily identify their own hive with less drifting.

This placement adapts itself to a two queen system I have found to be simple and advantageous in the production of comb honey. It should do equally well for extracted honey. Inspection of the brood nest can be made without disturbing the honey supers. It's not necessary to introduce new queens or reduce the colony to a one queen brood nest. Swarming can be controlled by removing combs of brood and substituting empty combs or foundation. What do you do with the combs of brood? Shake the bees off and give them to colonies that need more strength. Be sure you don't lose the queen.

To start the system, slide the two hives against each other and make sure the tops of the brood chambers are flush on top. If they were wintered in two deeps or with a shallow on top, each queen must be placed below in the one deep brood chamber. Find her or place a queen excluder between to determine where she is.

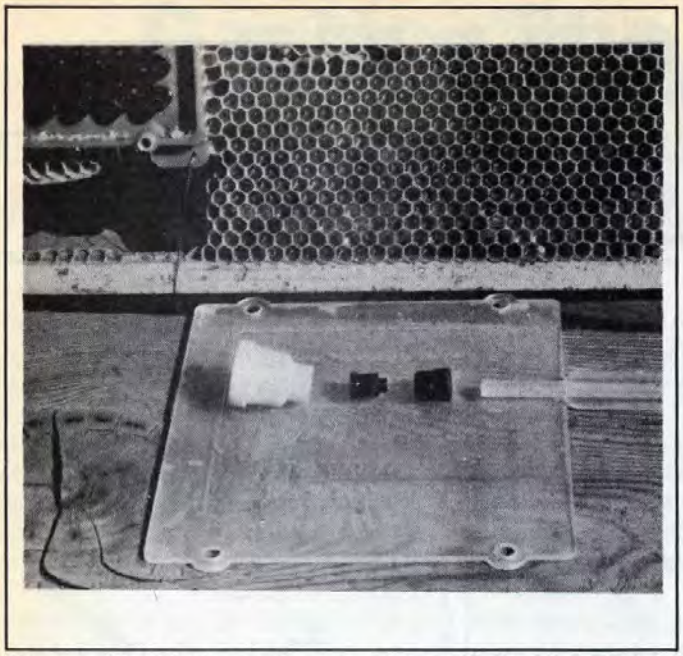
Now a queen excluder must be placed over the two bottom brood chambers so that it covers one half of each one. A thin strip of wood should be wired to the bottom of the excluder at the middle, to prevent the queens from getting together. Place a sheet of newspaper over the excluder and cut a few slits in it so the bees can start to clean it away. The two brood chambers which were set aside can be placed on the excluder with another excluder and a paper between them, if the queen had not been found. Check them a week later and queen cells will be started if the queens are below. Cut the queen cells or use them for nucs if you like. Best to mark the boxes so that if you find the queen, you will know which bottom brood chamber she belongs in. When you are sure the queens are below, remove the excluder from between the two top brood chambers. The bees will fill them with honey as the brood emerges and extracting supers can be placed above. If comb honey is to be produced, place an extracting super over the excluder and the combs supers above it. If the extracting super is full of honey, the bees will start in the comb supers without delay. The filled super will prevent the storing of pollen in the combs. When the honey flow starts, remove the brood chambers and pile on the comb honey supers. The time to convert to the two queen system is about the last week of April or when the dandelion begins to bloom.



Now you have one half of each lower brood chamber exposed and four or five frames are accessible for inspecton without moving the supers. A half size inner cover can be made from quarter inch plywood for each side and two half size covers with three telescoping sides to slide over them.

When the summer flow is over, remove the excluder and supers and return the top brood chambers, making individual hives of them again. Be sure they are well stocked with honey above for winter. Extra supers may be added for fall flow if needed. If the two colonies are left tightly against each other, each will help keep the other warm. I place a piece of linoleum over each inner cover hole and a sheet of styrofoam on for insulation. Be sure the slot in the rim is down for a top entrance and escape of condensation. If telescoping covers are used, they will slope outward when butted against each other. Place bricks on them to keep them from blowing off. The top insulation will keep the body heat under the inner cover when the bees are up there raising brood in the early spring.

I've been well pleased with the results of this arrangement. The bees filled the supers very fast and the brood could be checked quickly at any time with very little disturbance to the colony.□



The rear side of the frame, the cover is removed, the plugs are easy to transfer.

Beautiful drawn queen cells, just ready for hatching.

The queen cell plugs assembled to fit into the cell bar.

The new queen, marked and ready to start laying.

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You can also try what a beekeeper in Switzerland did. He wanted to raise 20 queens for his apiary, but he started with 90 queen cells, from 70 cells he sucked daily the royal jelly and gave some to his 20 queens, not on the larva, but on the side of the cell, that the larva does not suffocate and the nursing bees do the rest. He raised 20 superb large queens and also produced royal jelly for sale, as a highly valued health product.

For the commercial queen rearer the operation is different, he needs mating hives, special care for his breeder colony, the starter and the finishing hives and when he wants to perform artificial insemination he also needs a small laboratory and the instruments and above all he needs marketing.

They produce 1000 mated queens per month in the early season one queen breeder in Europe using only 10 Jenter Queen Rearing Combs, but 500 mating nuclei. The beekeeper converted his 80 colony honey apiary into a queen rearing apiary (he would have spent in US. $10,000) and he produced in the first season 2,000 mated queens in an isolated mating yard and 300 breeder queens artificially inseminated, (with $6.50 per queen and $35 per breeder queen, he would have made in the States $23,500 in three

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HONEY IN AMERICA'S SCHOOLS — PART II

by ALAN L. KING 607 S. Fuller Dr. Indianapolis, IN 46241

Part I of this series dealt mainly with our industry's efforts of promoting commodity honey in America's schools, where some 24,000,000 students are fed daily. Particularly we looked at our involvement in the 1985 American School Food Service Association conference which was held in Philadelphia in July. For our purposes there are basically three groups interacting in the exhibition hall at such a conference: school food service personnel, food industry personnel, and our own beekeeping industry personnel. Each group has its own aims and objectives. The aims and objectives of each turn out to be common and interrelated, which makes the relationships between the three elements quite important. In our case it means that others, for reasons to be discussed, are pulling in the same direction with our industry and therefore making our efforts count all the more. With regard to honey, the three groups are reacting to the same set of circumstances, namely that honey is available from the U.S. Government as a bonus commodity. We'll concern ourselves with the objectives of the three groups and in what ways they are reacting to the availability of commodity honey.

The beekeeping industry seeks, for reasons outlined in Part I, to maximize the use of honey in schools. School food service personnel seek to serve high quality, nutritious, low cost meals that are attractive to students. Food industry people seek to provide quality food products to the school food service at competitive prices.

It is the latter two groups that we will closely consider now; first, school food service personnel. Again, the goal of this group is to provide high quality, nutritious and low cost meals for students. And of course, their success is dependent also on student acceptance of the foods. Left-overs that go down the garbage disposal don't benefit anyone in the long run. So how does our product score with these criteria? For answers we'll need to turn to the school food service folks themselves. During the Philadelphia ASFSA conference, the author interviewed at random nearly 50 ASFSA members to gain insight from their point of view that could be passed on to bee industry members. A set of seven questions was asked of each person interviewed. The results should help to answer a few basic questions that beekeeping industry people are interested in and should aid in deciding whether or not using honey helps school food service personnel in

meeting their objectives. Nutrition is of utmost concern. All beekeepers know that honey is nutritionally superior to sucrose. Honey contains some vitamins and minerals, and although small amounts, SOME is better than NONE. Honey's simple sugar composition means that honey can be assimilated directly into the human bloodstream without further digestion, thus providing quick energy. What teacher would disagree with that when it comes to academics? The average student can use a little quick energy.

In terms of cost economy, what could be a better sweetener than free honey? Gladys Riche, supervisor of Food and Nutrition for the Lafayette Diocese in Louisiana revealed that her school system had saved about $8,000.00 in the last year by using honey. The system was feeding some 16,000 students in 43 schools during the period and using about 100 cases of honey per month.

Now, what about pleasing the palates of school kids? Honey does the job, and in a variety of ways. One-hundred percent of respondants interviewed by the author said that students do like the products that contain honey. Several commented that a degree of trial and error plays a role in modifying recipes to use honey, but that student acceptance is quite easy to measure by observing food remaining on trays as they approach the dishwasher. Adjustments are made in recipes accordingly, the end result being a high level of acceptance.

Many stories seem to circulate within our society about the poor quality of commodity honey. No doubt some quality problems do exist and both producer and packer should do everything possible to insure the highest possible honey quality. However, it's interesting to note that when asked, "How would you describe the quality of the commodity honey that you receive?", 95% of the respondants had no complaints whatsoever, calling the quality "good" or "excellent". The other 5% commented that they had only received one shipment of honey that they felt was poor and that the quality was O.K. in all other shipments.

Some beekeepers suggest that manning a booth at the national ASFSA conference has outgrown its usefulness. It is claimed that we only reach the same group of people each year, not making new inroads. This is a peculiar notion for beekeepers to have, who attend any national beekeeping conventions. Year in and year out a certain percentage of atten-

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dance is directly correlated with geographic proximity to the meeting site. Local folks are always better represented than average. The same applies to a national conference of the ASFSA. Of the sample group interviewed, 56% had been in either Indianapolis or Phoenix and received quantity recipes from ABF personnel. The balance (44%) were first time recipients. Ninety-six percent of those who had received ABF recipes before said that they found the recipes useful.

As was suggested in Part I, one of our important jobs at the ASFSA conference is to learn what we can from the people we're trying to help. And to that end we listen to all the ways that honey is being used and look for trends. A few emerge — some perhaps surprising and some not. Lots of honey is used in breads, cakes and cookies. Several ladies commented that they use a combination of honey and sugar in some recipes, particularly in cakes. Some honey promotion purists, I'm sure, would frown on using any sugar in such recipes, but the point is that honey is being used — not 100% sugar! One major use for honey all over the country is as a dip for chicken nuggets. Some use straight honey, some a honey/mustard sauce, some a honey barbeque sauce and some a honey sweet and sour sauce. All report very high acceptance of honey in chicken dips.

Charlotte Garner of Pascagoula, MS was one of a number of ASFSA members who told us that they routinely use squeeze bears or bottles on lunch tables for kids to dispense honey. Mrs. Garner supervises food service at 17 schools, feeding 6,000 kids and said, "We have honey bears on all tables at all meals, and have no problems". We use honey on everything." Some of the ladies voiced apprehension about turning the students loose with honey containers, but those who have tried it seem to agree that students make no bigger mess with honey than anything else. Cooks in the same system use honey as a roll glaze, brushing it on after a coat of butter. Mrs. Garner says, "The kids really gobble 'em up."

In just a couple years there has been a marked change in the ease with which school food service people are using and understanding honey. When asked, "Do you have any problems using or handling honey?", 88% said no. Nine percent said that they just needed more recipes. Two short years ago the answers would have been quite different. The point of view of school food service personnel with regard to honey can be summed up by using the words of Mrs. Wynell Rawson of Newton, Mississippi, who said, "We experienced early resistance from cooks as with any new product, but we have no problems now."

Now let's close in on the third group — the food industry people. For the most part we need to look at companies who supply foods for the school food service and how they meet their objective of supplying quality food products at competitive prices. Moreover, we need to see that in pursuing their own objectives, the food vendors are helping we honey promoters to pursue our goal of maximizing honey consumption in the schools.

Food quality is important to food vendors because it is so important to nutrition minded school food service administrators. Concern for product quality also stems from the already established fact that for a particular product to be successful from a sales perspective it has to be well accepted by our students. Honey fills the bill on both counts.

The current impetus causing food processors and vendors to use honey is its price. As was pointed out in Part I, honey is available at no charge to companies who use it in products destined for the school food service. That makes the lure of using honey as an ingredient in processed foods easy to understand. As companies move toward displacing other sweeteners with honey, they gain a competitive cost advantage over their competition. For example, if a certain bakery makes bread with honey and their competitors are using other sweeteners, the former can charge less for their bread then the latter. Natural progression leads more and more vendors to use commodity honey in their products to remain competitive. It's a chain of events that is highly beneficial to the beekeeping industry.

Making efficient use of federal commodities is so important that some companies such as Lova foods specialize almost entirely in using these commodities to produce finished products for the school food service. Lova now uses honey in five of the cookies in their product line. A spokesman for the young company said that they expect to use 30,000 lbs. of honey this year in cookies at the rate of 1½ lbs. per case. He indicated that Lova is considering the use of honey in their biscuits to "slightly modify the flavor." They are also developing a honey glaze to use on their croissants, a product that has been a very rapid grower, with sales growing four times during the past year. In addition, Lova will shortly make a new honey raisin bun that is expected to sell well.

During the Philadelphia conference, David Hackenberg, ABF board member from Pennsylvania, and the author spoke with Anthony Nolen of Lender's Bagel Bakery, Inc., West Haven, Connecticut. Nolen said that Lender's had recently introduced a new honey raisin bagel and it has become a big seller in a hurry. After asking if commodity honey was being used, we learned that only a week earlier Lender's had begun the process of acquiring commodity honey, a move that will reduce the cost of the new product and add to its current marketing momentum.

Some companies specialize in finished food products while others concentrate on products that are ingredients for cooks to incorporate in various foods. Bernard Industries does both, and between the two, they use or recommend the use of honey in about 24 products, according to sales manager, Norman Rosenfeld, who said that their research and development department continues to work on expanding their use of commodity honey.

General Mills distributed quantity recipe packets in Philadelphia which contained eight recipes that use various General Mills products at the point of preparation. Six of the eight called for honey as an ingredient!

One comment that was made at the ABF booth by several school food ser-

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Routine Inspections Of Colonies

by TOGE S.K. Johansson and Mildred P. Johansson R.D. 1, Box 256A, East Berne, NY 12059

Persons who want to keep bees and have no alternative to obtain information by reading may benefit from detailed specific instructions. From personal experience the authors know the frustrations of going this route, and hope the following discussion will be useful to the novice faced with opening a hive to inspect it for the first time.

Colonies should be examined thoroughly twice a year as a disease control measure; once in the spring prior to the flow and again in the fall. The periodic checks made in the interim to determine whether additional space is needed for honey storage can be made on a few of the largest colonies in the apiary. Recent research has established that colonies with the largest areas of empty comb available produced significantly more honey[1]. The number of inspections of colonies during the season can be substantially reduced by adding a greater number of combs sooner than had been the general practice heretofore. The colony requires as much space for ripening nectar as it does for honey storage.

Carlile suggests that beginners should be encouraged to open their hives as often as the wish in order to enjoy their hobby[2]. But it also follows that they should be informed of the facts in the matter to enable them to make intelligent decisions about when to manipulate their hives. Opening a hive gently to remove a comb for a few minutes and then return it, produced a rise in temperature from 68° to 85°F for 18 hours. The relative humidity fell to 17% (below the optimum for brood), and there was a gradual return to previous levels over a period of 50 hours[3]. S. Wagner's report that J. Dzierzon observed no significant disruption of foragers is confirmed, but Taber noticed a 20-30% loss in honey production on the day of manipulation during a major nectar flow indicating that the activities within the hive are interrupted. Frequent manipulations, as in queen rearing, may increase the incidence of Nosema disease[4].

There is entertainment and education in following the development of a newly established colony of bees. If brief observations are made at intervals of a week or ten days under the best conditions, the setback to the colony is probably minimal and is the "tuition" a beginner must pay to learn the craft of keeping bees. As the novice gains experience, fewer examinations are required and are made more efficiently.

Considerable information can be gained from watching the entrance of a hive without removing the cover: the comparative size of the colonies; whether there is a flow in progress; and pollen carriers as evidence that brood rearing is underway, and that a queen is probably present.

Equipment List

(1) Smoker in a fire resistant container to avoid starting a fire in grass or vehicle.

(2) Hive tool in belt holder

(3) Veil

(4) Gloves

(5) Tool kit in a basket or box with handle:

Bee brush

Smoker kindling, fuel & matches

Record book & pencil

Frame grip or tong if used

Brush and/or glass cutters if required

Bee-tight container in which to collect burr comb

Steel wool and/or modeling clay for plugging cracks used by bees as unauthorized entrances (in upper hive bodies they may maintain their brood nest near such entrances rather than in lower hive bodies)

Corks to close auger holes in hive bodies used as upper entrances during the winter

(6) Entrance reducers to close floor board entrances of dead or small colonies likely to be robbed.

(7) Anti-robbing devices during manipulations: 2 rolls of limp canvas on dowels, or portable top-less enclosure.

(8) For spring inspection:

One bottom board

Wide paint scraper for cleaning bottom boards

Pail or box for collecting debris from bottom boards

(9) When establishing small colonies above stronger colonies a variety of partitions may be used:

Inner cover with window screening on both sides of the bee escape hole, and a slot in the rim for the entrance

Queen excluder with window screening stapled on each side

Double division screen

Standard bottom board on other solid board such as a piece of plywood. (The opening of the underside of the bottom board will need to be closed with a strip of wood)

AVOIDING BEE STINGS

There are entire publications devoted to bee stings and how to avoid them, but the following suggestions may be useful.

(1) Light colored cotton or synthetic clothing is best. Avoid fabrics made of animal products such as felt, wool, or leather. If working without gloves, it is recommend that hair on the hands and wrists be removed to reduce stinging.

(2) Remove wrist watches, bracelets, and rings (swelling could require cutting the ring).

(3) Do not use odorous products such as perfume, hair spray, cologne, soaps, shaving lotion, etc. Dirty clothes with the smell of stings acquired earlier may arouse a colony.

(4) Tuck pant legs into boots or white cottom socks (not wool). Leggings, gaiters, rubber boots, cycle clips, and rubber bands or leg straps with Velcro fasteners are other options. A piece of elastic that fits under the instep of shoes can be sewn into the sides of pant legs.

(5) Wash hands and hive tools with water (or alcohol) to remove aroma.

(6) Always wear a bee veil to prevent stings into the eye or eardrum that may cause blindness or deafness. Dunking the veil in

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cool weater will provide some relief when temperatures (and tempers) soar. A sweat band or kerchief prevents perspiration dripping into the eyes.

Bee and human behavior

(1) Learn how to keep the smoker from going out. If too hot, place a handful of grass in the smoker to cool the smoke. Minding the smoker is an appreciated contribution by an assistant.

(2) Approach the hive from the side or the rear, and avoid standing in the bees' flight path as much as possible.

(3) Work slowly, smoothly, and boldly. Pry the hive cover off gently, do not jar frames, avoid vibrations, and do not crush bees.

(4) Manipulate the colonies on sunny, calm, and warm days between 10 A.M. and 4 P.M. when most older bees are out foraging. Avoid opening hives on the first days after the end of a honey flow, during chilly, windy, rainy weather, or at nightfall.

(5) Even gentle bees may be obnoxious during a nectar dearth. Then morning or evening may be the best time for manipulations that cannot be postponed to avoid robbing.

(6) If bees are increasing in numbers between, or on top of the frames, apply a little smoke over the frames (not down in between).

(7) If possible, have an experienced beekeeper on hand when you open a hive for the first time.

Dealing with stings.

(1) Apply smoke to the area immediately to mask the odor of venom which alerts other bees to sting, and scrape out the stinger to stop its pumping action which injects the venom.

Multiple stings may be indicative of aggressive bees. Close the hive as quickly as possible, and don't open any other colonies in the area. Try examing the colony again on a good day, and if still aggressive plan to replace the queen. Trap drones from such colonies when there are queens taking mating flights. Bees may be cross when they are undertaking supersedure.

(3) The fall inspection of colonies may be difficult when there is little forage available and populations are maximum. Exceptionally mean colonies can be dealt with by placing each hive body on an inner cover, and putting a screened inner cover on top. They can then be inspected separately beginning with the bottom box.

(4) Spraying colonies with a thin sugar syrup (1 sugar to 3 parts water by weight) may be helpful.

(5) Bees that persist in following the beekeeper can be swatted with a paddle which has small holes or screening to permit air to flow through.

(6) The use of ammonium nitrate (fertilizer) fumes is not recommended since this produces cyanide gas as well as nitrous oxide, and the bees' life is shortened by 50% or more.

GENERAL PROCEDURES

(1) With a well lighted smoker, direct three or four puffs of cool smoke into the entrance(s) of the hive to settle the guards. If there is a second colony on the stand or bench, it should be smoked also.

(2) Using the hive tool as a lever, crack a seal of propolis between the upper hive body and the cover or lid and raise it about 1/8". Blow two or three puffs of smoke through the crack, replace it for a minute, then remove the cover as gently as possible and place it upside down to the rear or side of the hive. If hives have both an outer and inner cover or have a mat or quilt over the frames, smoke should be applied as it is pulled off.

(3) Direct a few puffs of smoke across the tops of the frames; pry the hive body loose from the one underneath with the hive tool, and to reduce the chances of crushing bees set one edge of the box down on the rim of the upturned cover. If the frames in the hive body below are attached to the one being removed, the box should be put back and given a gentle twist before attempting to lift it again. Where telescope covers are used, the box can be placed on the upturned cover.

(4) Repeat smoking and lifting off hive bodies until the bottom box is reached. If the hive bodies are stacked on an empty box, the strain on the back as they are lifted up will be considerably reduced. It has been quipped that there are two sorts of beekeepers — those who have a bad back, and those who are going to have a bad back! Boxes may be placed criss-cross on each other to avoid crushing bees.

If there is danger of robbing, the boxes should be kept tightly closed and covered with a lid. If robbing does occur, the inspection should cease immediately and the entrance reduced by throwing grass, leaves, etc. across the entrance to prevent easy access by the robbers.

Robbing will be a serious problem if manipulations as in queen rearing, feeding, etc. must be undertaken when bees are not collecting nectar. A pair of damp canvas cloths, each the length of the hive body, can be rolled on rods and used to cover all but the frame that is to be inspected. But the use of a portable screened tent, cage, or topless "skirt" placed around the hive and operator may be advisable, or necessary, if any work is to be accomplished during intense robbing. For very aggressive bees, an umbrella with fine netting was designed to be clamped to the lower hive body[5]. A feeding of light syrup (1 part sugar to 3 parts water by weight) in a trough half-filled with sticks, straw, pine needles, etc. to prevent bees drowning will simulate a nectar flow, and enable work to be done that might otherwise be impossible.

(5) Scrape off any burr comb or propolis on frame surfaces or between combs which obstruct free movement of air and bees, and thereby interfere with temperature regulation which may contribute to the onset of preparations for swarming[6]. Such bits of burr combs should be collected in a covered can to prevent inciting robbing by bees, and to save a valuable bee product. A step-on garbage pail would be a useful accessory in a large apiary.

(6) Replace hive bodies checking for stores and brood. Their weight will indicate the quantity of stores. An accurate inventory can be made using five pounds as the weight of full, deep Langstroth sized frames and 2½ pounds for shallow frames. With experience, it may be sufficient to lift the rear end of hives ("hefting") to locate the light ones that need attention. But if the hives contain heavy, dark combs filled with pollen this can be deceptive.

(7) Inspect hive bodies containing brood for the presence of the queen, eggs, brood, queen cells, and disease:

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(a) Give a few puffs of smoke along the tops of the frames to drive the bees down. Use additional smoke as needed to keep bees down below the tops of the frames. Experience will indicate how much smoke is needed, but usually very little is required when the colonies are busy collecting nectar and pollen.

(b) Pry loose each end of the first frame in the hive body using the corner of the hive tool. If it is firmly attached to the side of the hive with propolis, use the next one that is free. The propolized frame can then be removed at the end of the inspection and scraped before replacing. A "dummy frame" (also called a division board) made of a board placed on one side of the hive body is easier to remove than a propolized self-spacing frame?. More than one frame can be picked up at one time to speed up inspection (but not when there are less than 10 frames in the hive body).

(c) Get a good grip on each end of the top bar with the thumb and forefinger, being careful not to crush any bees. Lift up the frame slowly so that any bees on it can get out of the way. Avoid rolling or scraping the bees on the edge of the next frame. Hold on and don't drop the comb even if by chance you get stung! A frame-lifter or tong designed for the purpose may be a helpful tool for the beginner in removing the first frame.

(d) The first or second frame is likely to have capped honey, and perhaps some cells of open honey with bees gathered around sucking it up. After making certain that the queen is not on the comb, lean the comb on end against the opposite side of the hive to avoid bees gathering around the feet of the operator. In cool weather, brood should not be left outside the hive. Two items once listed in bee supply catalogs would be useful: a comb-holder that hooked over the edge of the hive on which to hang the first frame; and a covered "comb-bucket" that held five frames secure from robbers.

(e) Pry loose the next frame and hold it above the open hive to avoid losing the queen, and to catch drips of honey or nectar. Look down into the cells for the presence of larvae (white worm-like objects of various sizes). Very tiny oval objects standing on end in the bottom of the cells are the eggs. It is easier to see the contents if the operator stands so the light from the sun is coming from behind, and the comb is tilted so the light shines directly down into the cells. Any differences in the comb or contents will stand out sharply because the light is reflected at a different angle and focuses our attention on it. It is impossible to examine each cell individually, the irregularities stand out as our eye passes over the comb. After a comb is examined, it should be returned to the hive in the same order and orientation it was found as the combs have irregularities and may not fit otherwise.

(f) If marking queens is practiced, the necessary equipment (lacquer, brush, etc.) can be carried conveniently in a fish bait container fastened to a belt. Queens marked with a spot of color using a five color code are more easily found, especially in a large population at the height of the season.

(g) An experienced beekeeper would probably know that the colony is queenless from differences in behavior such as the sound ("low, mournful lament"), the agitated and erratic movement of the bees, and the quick challenge of the bees as the hive is opened and the frames manipulated. That field bees are collecting pollen is not a certain sign that a queen is present. Queenless colonies can be united safely to a colony with a queen. It may not be practical to requeen with queens procured from queen breeders because of frequent delays in the delivery of queens, and the high percentage of supersedure of such queens.

(h) Some combs may be almost completely filled with cells that are capped over with tan to brown paperlike coverings; these contain the pupae which are undergoing the process of changing into adult bees (metamorphosis). In some combs the young adult bees will be chewing their way out of the cells. Even a single sunken cell with a perforation in the capping can be spotted, and should be checked for the presence of larvae or pupae that may have died from brood disease. Consult manuals and apiculture advisory staff for details. Diagnosis where only one or two cells are present may not be reliable, but properly prepared samples can be sent to the appropriate agency laboratory for microscopic determination. Some states have apiary inspectors who visit apiaries and check the colonies for the presence of disease. Contact your local apiary inspector whenever you find evidence of conditions that might be pathological. If you obtained your equipment locally, the dealer should be able to provide information about the disease.

Spring Inspection

The first examination of the season should be undertaken on a warm day when the bees are flying freely to collect nectar and pollen from spring flowers and fruit blooms, and requires approximately 20 minutes per hive if there is no serious problem.

Procedure.

(1) Remove wrappings, insulation, or chaff box used on the hive during the winter.

(2) Lift off all the hive bodies including the bottom one, and set the bottom or floor board off to one side to be scraped clear of dead bees, comb cappings, and other debris that accumulated during the winter. Such material can be collected in a box or bucket for use as mulch around plants such as blueberries requiring an acid soil. European bee supply houses provide a long-handled scraper that can be used to clean off floor boards when weather conditions prevent taking hives apart.

(3) Replace the bottom board with a clean spare one brought along for this purpose. The scraped bottom board from the first hive can be used for the second hive but such exchanges of boards may be undesirable if there are chalkbrood mummies or other evidence of disease in the debris.

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First Flights

New Product Release:

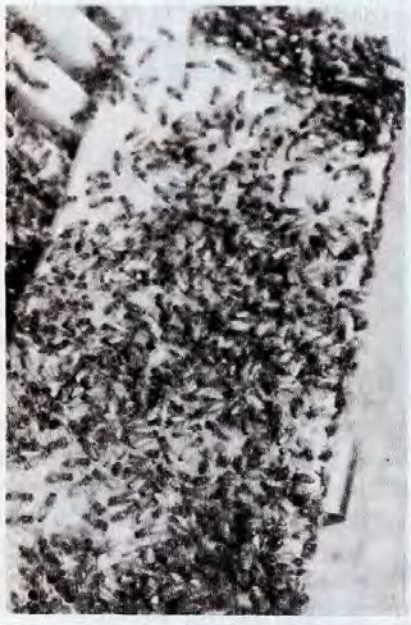
Perma-Comb Introduces:

New, Improved 6″ Plastic Comb

Better Bee Acceptance.... More Economical

Perma-Comb Systems has announced the development of a new, improved, plastic comb which is stronger, lighter and more affordable than the original product. . .and shows excellent bee acceptance.

Molded in a single piece of high-density, linear polyethylene, the new comb features two sides of fully-drawn cells with the exact dimensions for producing worker bees. Like the original product, the fully-drawn, hexagonal cells are angled down 12½ degrees, ending in a truncated pyramid.



However, the plastic of the new Perma-Comb has been textured along the sides and bottom. This makes it easier for the bees to grasp, resulting in greater bee acceptance.

Also, a revolutionary design, eliminating the frame, lets the new unit offer 11% more cells. At the same time, each unit is .30 pounds lighter — making each super three pounds lighter!

Spacing between combs — formerly determined by spacers on the frame — can now be adjusted by two detrachable spacers on the top of each ear, allowing a choice of 9 or 10 combs per super.

In addition, the new, single-piece Perma-Comb is narrower than the original (without losing cell depth) to provide still more space between the combs.

Finally, the change in construction — from two pieces joined together, to a single piece — makes the new Perma-Comb extremely durable, and stronger than any existing unit on the market. The new product will come with a 10-year warranty, excluding the ears.

For more information, write Perma-Comb Systems, 22543 Ventura Blvd., Suite 214, Woodland Hills, CA 91364. Or call (818) 992-0369.

HONEY IN SCHOOLS Cont. from pg. 601

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vice people was that they would like to have available various honey chicken dips in individual portion packs. In otherwords, dips such as barbeque sauce or sweet and sour sauce would be made by food processors rather than school cooks, thereby making the dips easier to use. When a need is expressed by the school food service folks, the food industry listens. So JoAnne Weber and the author spoke to Donald Dix, director of national accounts for the largest food conglomerate in the country, Beatrice Foods. The interest in honey chicken dips was discussed and Dix indicated that the increased consumption of chicken nuggets in the schools suggests that the matter of chicken dips should be investigated. He took a copy of the ABF barbeque sauce recipe, saying that it would be forwarded to the Beatrice research and development department and the matter taken under advisement.

The fact that these foods industry people are looking to expand the use of commodity honey means that numerous research and development efforts are underway. And considering the general lack of such activity from within our own industry, these product development efforts are certainly welcome. It is interesting to note that the amount of honey processed into products for the school food service by food processors has increased nearly five times in just the past two years. It is expected that this growth will continue in the future until it becomes a much more significant portion of the several million pounds per year used by America's schools.

At an exhibition where more than 250 companies and commodity groups are showing off their products, the examples of honey use and honey promotion go on and on.

What American beekeepers should realize is that we have only scratched the surface in terms of the amount of honey that can be used in America's schools. The growth potential is fantastic and hopefully the reasons why we should fuel that growth are becoming more obvious.

Next month, "Honey in America's Schools" will be brought closer to home — YOUR home and what YOU can do to help achieve our objective of raising honey consumption among America's school kids.

HONEY REPORT Cont. from pg. 568

.sales at 25 cents per pound. This is honey that is obtained when wax is rendered and has a scorched flavor. Los Angeles County Fair Sept. 12-28th had several excellent beekeeping exhibits.

Honey flows are long over in Oregon. Bees are scavenging wherever on coast. Fall weighing plus feeding when necessary has begun. Extracting is hopefully on the home stretch. Sales have picked up some. I've noticed some real cart stoppers in honey, (probably including imports). Bulk honey in bring your own jars is .91-.99-$1.10 per lb. the lower pricing, being specials to get you in the stores.

Some Of The Effects Of Insects On Human Society

by JAMES E. TEW Agricultural Technical Institute Wooster, Ohio

Estimates vary, but insects were on earth many years before man. For all practical purposes, man developed in an insect world and, therefore, has been influenced by this animal. Four broad categories of insect effect are the harmful, beneficial, economic, and esthetic effects.

Consideration is given first to insects as disease causing organisms. Probably 10,000 kinds of mites, ticks, and insects inflict man directly or indirectly with disease. There are many and varied ways for the transmission of disease. In some cases, such as that of the itch mites and screw worms, their mere presence, without the transfer of germs may produce a disease or harmful condition. Normally, some pathogen is transmitted.

Mosquitoes rank with the world's top killers of man. They can be found in practically all parts of the earth and are credited with spreading disease as malaria, yellow fever, dengue, bancroftian, Malayan filariasis just to name a few. In the case of malaria, Anopheles mosquitoes are the carriers of human malaria.

> Considering the entire world, malaria has been said to be the most important disease. It is estimated that in the United States in 1935, there were about 900,000 cases and perhaps 4,000 deaths; and for many years the prevalence of malaria retarded the proper development of the South.[1]

Outbreaks of this disease have occurred all over North America but are now rare in the United States. It was pushed southward because of some of the warm swampy areas and the southern habits of being outdoors much of the time.

Up until the late 1800's, yellow fever was one of the most dreaded diseases in the world. At that time, its cause was not known. Terrible epidemics swept tropical countries and United States' seaport towns such as New Orleans, Philadelphia, and Cuba's Havana. This disease was the most important factor in the failure of the French to build the Panama Canal. In 1900, Army surgeons working in Cuba discovered that the disease was spread by a specific mosquito, *Aedes aegypti*.[2]. It was though that the fever could be completely annihilated, but it has since been discovered that a disease known as "jungle fever" exists in the remote areas of South America using monkies as a reservoir. This disease still remains a threat since, at any time, by use of modern travel, the disease could be transported to any part of the world. A suitable vaccine has been perfected.

One of the most common and versitile insects known is the house fly. *(Musca domestica)* This insect has been reported in nearly every habitation in the world. The main feature of the house fly that causes it to be such a pest is its curiosity, which leads it to go everyplace and feed on almost everything. It has been shown that the house fly is naturally infected with the pathogens of more than 20 human diseases and many authorities believe that the fly is a vector of typhoid fever, epidemic or summer diarrhea, amoebic and bacillary dysentery, cholera, poliomyelitis and various parasitic worms.[3] It must be kept in mind that the fly is not the sole vector of any of these diseases as the mosquitoes are for malaria.

According to Patrick Buxton in *The Natural History of Tsetse Flies,* the word "tsetse" comes from Sechuana language of Bechuanaland and means "fly destructive to cattle." The following remarks indicate the powerful effect of these small creatures in the world.

> Evidently, tsetse flies enjoy a wide distribution in geological times, since four species of fossil *Glossina* have been described from the Oligocene shales of Colorado. Today, the flies are restricted to continental Africa south of the Tropic of Cancer where they occur in so-called "fly-belts". They hold an area of about 4.25 million square miles and remain as an obstacle to the development of tropical Africa.[4]

The fly apparently no longer occurs in North America. It has been suggested that the extinction of prehistoric horses and camels in North America may have been caused by the tsetse fly. The tsetse still has a great influence on the economy of Africa. On the fringes of the tsetse habitats, animals such as oxen or horses do not survive very well. This is one reason Africa was the "dark continent" while many other nations were able to utilize horses, cows, and oxen in their development.

Not actually a major pest of man, but certainly a repulsive group are the bot flies, of which two will be discussed. The sheep bot fly normally attacks livestock, but may occasionally attack man. The sheep bot fly sometimes containing a number of minute, active, spiny larvae. The shepherds in North Africa are said to be blinded by repeated attacks.

The human bot fly is a serious pest in parts of Brazil and Central America. The larvae may attack several hosts other than man. Part of its life history is worthy of note. The adult normally lives its entire life in the forest. Females do not directly deposit eggs on humans, but rather on flies, ticks, and mosquitoes. It is this type insect that transports the eggs to the host.

L.H. Dunn has described the life history of the human bot fly most accurately as the result of an infestation

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which he permitted himself to suffer in the Canal Zone. Two larvae were allowed to bore into his arms permitting him to witness the effects of this insect on man. There were itching, lesions, and toward the end of the life cycle the pain became excrutiating. No pain or sensation was observed, however, when the larvae emerged.[5]

Disease carried by fleas have definately left a mark on human society. These insects were responsible for many of the great plagues that have occurred through the years. The first recorded pandemic of plague was that of Justinian in the sixth century, starting in Egypt and spreading to Constantinople. It lasted 50 to 60 years with estimated number of victims at 100,000,000. It's certain that the plague existed much earlier than 542 A.D.

> More than a thousand years before Christ, the Philistines were afflicted with an outbreak of a disease which killed large numbers of people according to the writer of Samuel, Chapters five and six. Those who died had 'emerods in their secret parts,' and the survivors were 'afflicted with emerods.' The only reasonable interpretation of this account is that it described an epidemic or possibly a pandemic of Bubonic Plague.[6]

More written history is available concerning later plagues that occurred in Europe. Roughly, during the middle of the 14th century, the second plague pandemic occurred. Either the second plague had more accurate figures or the first plague was more severe since 25,000,000 rather than 100,000,000 victims were claimed. At any rate, this was still one-fourth of the population of Europe.

> In Great Britain, from half to two-thirds of its people perished. The great plague epidemic of London, 1664-1666, is said to have killed 10,000 persons out of the total population of 450,000. The plague disappeared from England in about 1680 having been almost continually present for 140 years with five epidemics.[7]

The rat is the principle means of spreading the disease. Fleas move from rat to rat. Naturally, the rat is often times transported in commerce which would explain outbreaks of the plague in distant port cities.

The first recorded appearance of the plague in North America occurred in San Francisco on March 6, 1900. Not until 1902, was the transmission procedure shown to be rats. Up to 1904, 121 cases were reported in San Francisco with 118 deaths. After this initial outbreak, there were sporatic cases reported every few years, but nothing ever remotely as serious as that of the great European plagues. "Vernon Link, who reviewed at some length the history of the plague in the United States, states that from 1900-1951, 523 cases of plague have occured in the continental United States with 340 deaths"[8] The plague still exists today in parts of the tropics, but, so far, control measures have been effective.

From man's standpoint, the order Hymenoptera is probably the most beneficial in the world. A large number of its members are parasitic or predators of insect pests. This order also has, as a member, one of the few domesticated insects, the honeybee. Without the use of insect predators and parasites, the survival of man and all other forms of animal life would be practically impossible.

Apis mellifera is the common honeybee. The value of this insect is shown in that, roughly, $150 million dollars worth of honey and beeswax is produced annually in this country. Its pollinating activities are worth probably 15 to 20 times this amount[9]. Another aspect that must be considered is that some people are highly susceptible to Hymenoptera stings. It is fairly common knowledge that insect stings cause more deaths per year than poisonous snake bites.

History records many instances of honeybees or other Hymenoptera being employed in times of war for the purpose of confusing or even routing the enemy. The November, 1973, issue of *The American Bee Journal* states the following:

> In the Middle Ages, both attacking and besieged forces sometimes resorted to the use of "baskets" of bees to inflict fear and panic among their adversaries, and we remember reading a very vivid account of how a much-beleaguered town, whose inhabitants were on the verge of collapse, as a last resort took skeps of bees and catapulted them among the enemy surrounding the walls.
>
> In the latest war in Vietnam, it was reported that the North Vietnamese had been using bees to harass American and South Vietnamese troops.

Another medially important group of insects is Anoplura (suckling lice). The three main types of lice that affect man are head, body, and crab lice. Crab lice, though causing extreme itchng, are not medically important. The same cannot be said for several other types of lice. Many military campaigns have been affected because lice have spread several diseases. "The 'red death' of the Middle Ages has been the scourge of soldiers and displaced people; during these times of their great misery, they were least able to exercise the customary habits of sanitation."[10] Epidemics of louse-borne typhus normally follow wars because normal sanitation measures cannot be taken by soldiers or civilians. The following accounts in times of war depict this.

> At the beginning of W.W. I as many as 2500 new cases a day were hospitalized with typhus in the Serbian Army; among civilians, the number was said to be three times greater. The outbreak temporarily checked the impending invasion of the Austrain Army at the Serbian borders more effectively than any military strategy. Napolean's

retreat from Moscow is believed to have been due to typhus than to cold weather.[11]

During World War I, Trench fever reached epidemic proportions but has not been greatly important since. Trench fever, also known as 5-day fever or shank fever, became of considerable importance when it involved 1,000,000 soldiers during World War I. It was also present during the second war in Yugoslavia and the Ukraine.

Another louse-borne fever is Epidemic relapsing fever. Wide spread epidemics do not occur today but were of importance in both World War I and World War II. Before this time, it had been a sporatic problem in human history.

Of the many thousands of insect species known to man (estimates range widely from 625,000 to 1,500,000) a great many affect him and his property only slightly; some are beneficial, others are injurious in varying degrees. Many figures are available concerning total cost per year. One estimated average annual cost is $4 billion.[12]

A major example of crop loss due to insects is the persistent boll weevil. This insect, through its destructive effort, has forced much of the South to change the entire agricultural program. The amount of economic damage is phenomenal. "From 1909 to 1949 the average annual loss was $203 million with highs and lows of $500 million and $100 million respectively. To this figure, damage of other important insects must be added."[13]

In the area of stored grain and grain products, the toll once again is high. Losses to the world production of cereal grains, pulses, and oil seeds caused by insects, rodents and mold and fungi were the subject of a survey conducted by the United Nations Food and Agriculture Organization in 1947. The conclusion was that roughly 10% of the total grain production was lost to these pests.[14] Grains serve as the main source of food for many countries both developed and underdeveloped. The nations that are in such poor economic conditions suffer even more in low grain production years. Consider, for instance, the "Russian Wheat Deal". The grain that was sold to Russia represents food that countries such as India would not get since it was not available to United States Foreign Aid Programs. It must be stated that factors other than insects were responsible for Russia's poor grain crop.

A problem that is apparently becoming worse is the damage done by the Southern Pine Beetle. "In epidemic outbreaks it may kill millions of dollars of green timber."[15] The insect is a vector of blue stain fungus that plugs connective tissue. The economic implications this insect could cause in the pine producing regions are staggering.

Insects are not considered food to many Americans, but some of the primitive people of the world consume insects in great quantities and consider them to be luxuries. "The secretion from the scale insect, *Coccus mannifera,* it is reported, was eaten by the natives of ancient Jerusalem."[16] In some portions of the world, the high salt content of some insects is used in place of salt. A few examples of insect foods are sauba ants, *Atta cephalotes,* used by natives of the Amazon Valley and termites. "Termites are a favorite food the people of the tropics. The large queens sometime measuring three inches in length are sought in particular."[17] The eggs of *Corixa femorata* are commonly fried in fat and are considered to be a delicate dish in Mexico. The grub of the goliath beetle of Africa, one of the largest of the Coleoptera, is an especially fine food morsel. One of the cooked or prepared varieties was locusts ground in stone mortars and made into flour by the Greeks. The American Indians dried or smoked the larger caterpillars and preserved them for latter use. The Koo-tsabe *(Ephydrahians)* was removed from the puparium and used for food.[18]

Insect "music" has served to inspire some individuals while harassing others. Virgil was offended by the harsh sounds of cicadas for he said, "They burst the very shrubs with their noise," while Shelley wrote "Merrily one joyous thing in a world of sorrow" referring to the songs of grasshoppers. Dickens was obviously inspired by the cricket on the hearth. Nicolas Remsky-Korsakov was impressed enough with the drone of the bee to compose "The Flight of the Bumble Bee". Joseph Strauss attempted to mimic the dragonfly's erratic flight in "Dragonfly". "Papillon" was used as a motif by Edvard Greig. In Japan, Cicadas and crickets are placed in small cages like birds, and their songs are considered agreeable. Each year they hold the "Festival of Singing Insects". At this time, all of the insects are released.[19]

Insects are also prominent in the arts. Even today, jewelery and pictures are made from insect parts. The Indians of America used portions of insects much like feathers in their crafts. The Jivaros of Ecuador made ear rings of the shiny green elytra of Buprestid beetles. Mention is made in the Bible to bees, beetles, fleas, gnats, grasshoppers, hornets, lice, locust, moths, and palmerworms.[20] Japanese artists have relied heavily on the insect as an art subject and have reproduced it in practically all mediums.

The Egyptians have always prized the scarab beetle. This beetle was selected as a symbol of their sun god, Khepera. It symbolized a soul emerging from the body, which explains why it is always pictured on a mummy case.

Many products useful to man in an economic or medicinable form are available from insects. Needless to say, honey, beeswax, and other products obtained from the honeybee's endeavors are of major importance. China wax is secreted by a scale insect, *Ericerus pele.* The lac insect of India produces about 40,000,000 pounds of stick lac a year which is used to manufacture shellac. One scale insect, *Coccus mannifera,* which is found on trees in Mount Sinai, produces a flakey secretion which is edible and is thought to hav been the manna consumed by the Israelites. Chochineal is a bright red pigment obtained from the ground bodies of a scale insect, *Coccus cacti,* which lives on the prickly pear and other cacti. This pigment is used mainly as a cosmetic, in rouge, cake coloring, beverages and medicines. The silkworm, *Bombyx mori,* is an important element in several societies. Tannin is obtained from gall insects and

Continued on next page

Continued from previous page

is used to tan hides and in the manufacture of durable inks.[21]

Insects are used to medicine in a few ways. An extract from the blister beetle, cantharidin, is used in treatment of diseases of the urinogenital system. An extract from the bodies of bees, "specific medicine apis", is used in treating hives, deptheria, scarlet fever, and dropsy. Larvae of the genus *Wohlfahrtia* have been used to clean-up decayed tissue and bacteria from a wound.

The effects of insects on human society seem endless. Hardly a day passes that most people are not affected in some way by some of these versatile creatures. The immediate future does not seem to forecast a dramatic change in this situation.□

Footnotes

[1]Metcalf, Flint, and Metcalf, *Destructive and Useful Insects* (New York: McGraw Hill, 1962), p. 998.

[2]*Ibid.*, p. 999.

[3]*Ibid.*, p. 1032.

[4]William B. Herms and Maurice T. James, *Medical Entomology* (New York: The Macmilliam Company, 1967), p. 343.

[5]*Ibid.*, p. 391.

[6]*Ibid.*, p. 408

[7]*Ibid.*

[8]*Ibid.*, p. 409.

[9]Donald J. Borror and Dwight M. Delong, *An Introduction to the Study of Insectgs* (New York: Holt, Rinehart, and Winston, 1964), p. 602.

[10]United States Department of Agriculture, *Insects, The Yearbook of Agriculture 1952* [Washington: Government Printing Office, 1952], p. 157.

[11]*Ibid.*, pp. 157-158.

[12]*Ibid.*, p. 146.

[13]*Ibid.*, p. 143.

[14]Richard T. Cotton, *Pests of Stored Grain and Grain Products* (Minneapolis: Burgess Printing Company, 1963), p. 1.

[15]United States Dept. of Agriculture, *Insect Pests of Southern Pines*, [by William H. Bennett and H. Eugene Ostmark] (Washington): n.n, 1972, p. 2.

[16]S.W. Frost, *Insect Life and Natural History* (New York: Dover Publications, Inc. 1959), p. 63.

[17]*Ibid.*

[18]*Ibid.*, p. 64.

[19]*Ibid.*

[20]*Ibid.*, p. 65.

[21]*Ibid.*, p. 61.

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JENTER METHOD
Cont. from pg. 599

months or $13,500 above his investment). He ran his operation together with his wife, while he spends the rest of the year as a sparetime beekeeper. The new simple Jenter transfer method together with the APIDEA mating box is the secret of his success.

More often I was told, that there is in North America some difficulty with extreme weather conditions in different places, but as we all know, the honeybee is the oldest, or at least one of the oldest creatures on this earth and has survived the severe conditions through billions of years. Maybe only the human beings mismanage the bees, because when there is a nectar and pollen flow, there is also an environment, where the bees can live, overwinter, and reproduce their kind.

For more information on the Jenter Queen Rearing Comb, please write to: C.H.R.A., 293]0 — 48 Ave., Langley, B.C., Canada, V3A 4R1. Ph. (604) 534-2631.□

INSPECTION -- cont. from pg. 604

(4) Replace the boxes on the bottom board in their original order. Remains of bees and debris between frames should be poked out with the hive tool. If extensive, it may be necessary to remove a frame so that other frames can be separated.

(5) Examine the frames on which the bees are clustered for eggs in worker cells as evidence that the queen has survived the winter and is laying.

(6) Scrape off burr comb on the frames to make removal of combs easier, and to reduce the danger of crushing bees when the hive bodies are replaced.

(7) As the hive bodies are replaced, record whether the colony has adequate stores of honey or requires feeding.

(8) In areas where additional cold weather is a possibility, insulation or coverings should be replaced.

Whenever the ambient temperature in late winter rises sufficiently for bees to fly, hives without flying bees are suspect. The hive cover can be lifted briefly to determine whether a cluster of live bees is present. Hives with dead colonies which are being robbed out will also have flying bees but can be distinguished by a waxy accumulation around the entrance or the flight hole in the upper hive body.

The importance of finding dead colonies cannot be overemphasized. The honey will be robbed out by bees from other colonies within a radius of two, or even five or more miles[8]. If the colony was diseased, the spores contained in the honey may infect the robbing colonies. It is therefore essential to close the entrances of dead colonies, and seal any cracks large enough for bees to gain entry with steel wool or clay.

Hives containing dead colonies should be removed to a bee-tight building as soon as possible for inspection and renovation. Moldy combs with dead bees in the cells can be given to large colonies later in the season where the combs will be cleaned and polished until they are as good as before. If there is no disease present, the honey from such colonies can be used to feed colonies short of honey but such should not be exposed in the open when robbing is likely to occur.

To be continued next month. Topics covered with be: Queenright, Drone Layers, Requeening, Colony Size, Summer and Fall Inspections.

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TEXAS
The AHPA El Paso Convention

The Holiday Inn

The Inn is located in downtown El Paso within walking distance of the border. Free transportation is available at the airporet. To avoid confusion be sure to say "Downtown Holiday Inn" because you may find yourself in the "Midtown Holiday Inn'. Room rates: Regular rooms $32.00 — 1 or 4: Kings, $45.00.

The general assembly program will be designed to cover not only the industry's current problems but future problems as well. We are inviting the speakers from industry and government who can b est address the several subjects that need attention. If an important subject is not listed in the program, this does not mean that our association has lost interest in a particular project. Subjects that are clearly understood need very little attention except in the resolutions.

On the evening of the 8th, a get acquainted reception will be scheduled. Two hours are planned for Juarez. An afternoon shopping tour for the ladies on Thursday, Jan. 9th and an evening in Juarez on Friday, Jan. 10th. A tour to the Carlsbad Caverns can be arranged. A tour agency representative will man a desk at the registration area and take care of all tour details.

Everyone is invited to attend. Additional information will be published in the December issue of the journals. Please contact us: The American Honey Producers Association, P.O. Box 368, Minco, Oklahoma 73059, Phone, 405-352-4126.

NEWS and EVENTS

William Nye Honored For Service To Beekeeping

William P. Nye, an apiculturist retired from the U.S. Department of Agriculture Bee Laboratory in Logan, has been honored by the Western Apicultural Society for outstanding service to beekeeping.

Nye, 68, received the award at the society's eighth annual conference held Aug. 16th at Oregon State University in Corvallis.

In his more than 35 years of federal service, Nye has worked on a variety of projects, including: selection of special strains of honey bees for alfalfa pollination; basic foraging behavior of bees; effect of light on rearing of honey bees; relative attractiveness of various pollen and nectar plants; special devices for counting bees entering and leaving the hive; pollination of vegetable and fruit crops; and the biology of wild bees (other than honey bees) as pollinators of agricultural crops.

Nye was born in Logan, and holds bachelor's and master's degrees in entomology from Utah State University. He served in the U.S. Marine Corps during World War II.

He is an accomplished photographer, and has served as chairman for the insect photo salons for both the national and Pacific Branch meetings of the Entomological Society of America. In 1967, he began the insect photo salon for Apimondia, the international beekeeping society, and his photographs placed first in the society's 1969 Munich meeting and second in the 1971 Moscow meeting. In 1982, Nye served as president of the Western Apiculture Society. He has published more than 75 papers on bees and beekeeping, illustrated with his photographs.

He continues to keep honey bees and to teach a beekeeping course at USU each year.

EAS

At a recent Conference of the Eastern Apicultural Society of North America, Loretta Surprenant of the William H. Miner Agricultural Research Institute was elected to serve as Secretary of that society.

E.A.S. was founded in June, 1956 at the University of Maryland, and is an organization primarily for hobby beekeepers. Its annual event is the Conference which is held each August at a land-grant university. Approximately 750 beekeepers attended this year's convention which was held at Franklin and Marshall University in Lancaster, Pa.

E.A.S. is the largest beekeeping organization in Northeastern United States. It consists of 17 eastern states and five eastern Canadian Provinces, stretching as far south as North Carolina and as far west as Ohio.

Alabama Honey Queen

Jennifer Lynn Clark, a senior at Dothan High School, is the Wiregrass Beekeeper Association's Honey Queen for 1985-86.. She is the 17-year-old grand-daughter of James and Vermelle Clark, members of the association. She will represent the beekeepers organization in the National Peanut Festival parade and at other activities during the year. Jennifer's many high school activities include being editor of the yearbook and president of the National Honor Society. She is president of the youth choir at Grandview Baptist Church, and she teaches baton and aerobics. She plans to attend the University of Alabama and major in biochemical research.

Jennifer Lynn Clark — Alabama Honey Queen 1985-'86.

Michigan Beekeepers Association

She is Pennie Reece of Sterling Heights, Michigan. She is a Dental Assistant and going to MACOMB College. She is an ice figure skater and a model. Pennie has her own bee hive and enjoys working her bees and traveling around Michigan promoting honey.

KENTUCKY

The Kentucky Revised Statutes require that every person who owns or possesses bees apply for registration with the Kentucky Department of Agriculture. Such an application must be filed on or before July 1st of each year.

An example of the fee schedule is in an apiary of ten colonies, the fee for the first three colonies would be twenty-five cents, and thirty-five cents for the remaining seven colonies, totaling sixty cents.

The payment of these fees should be sent to the Kentucky Department of Agriculture, Marketing Division, 7th Floor, Capital Plaza Tower, Frankfort, Kentucky 40601, before July 1, 1986. You will receive a receipt upon payment of the fees as proof of your registration.

I appreciate your prompt consideration of this matter. If you have questions about these fees, please contact our Marketing Division at 502/564-2297.

American Beekeeping Federation Convention News

For More Information Contact Troy Fore 912-427-4018
OR Frank Robinson 904-332-0012

With a theme of "Research— The Path To A Future" The American Beekeeping Federation's 1986 Convention will be a good investment for anyone serious about beekeeping, especially the future of American beekeeping. And, with Phoenix, Arizona, and the "Valley of the Sun" as a setting, the off-hours of the convention are sure to be a social success.

The convention is set for Jan. 18-25, at the Hyatt Regency Hotel in downtown Phoenix. The schedule calls for the general session to open on Sunday afternoon, a departure from previous schedules, made so those flying into Phoenix can take advantage of lower airfares for over-weekend stays.

A feature of this year's convention will be an all-day symposium by the North American Committee on Parasitic Mites and the Africanized Bee. The convention program for Monday will be devoted to the symposium and discussion on African bees, tracheal mites, and varroa mites. International speakers who have personal knowledge of the pests will be on the program and simultaneous translation will be provided for Spanish-speaking guests.

In consideration of the convention site's proximity to the USDA's Carl Hayden Bee Research Center in Tucson, Tuesday, has been set aside to allow tours south to the bee lab and sightseeing in Tucson. Other tours are available north to Sedona and Oak Creek Canyon's Red Rock Country, and even to the Grand Canyon.

As usual for the Federation convention, meetings of the National Honey Packers and Dealers Association, the Honey Industry Council of America, and the ABF Ladies Auxilary are scheduled during the week.

The American Honey Show is another standard of the convention. This year the Arizona host committee has arranged for unique prizes for the 13 first place winners and the best of show. The first place entrants will receive custom wall plaques with Arizona cutouts decorated with turquoise. An authentic Kachina Indian doll has been obtained for the best show trophy. For honey show rules and entry forms, contact the Federation office.

The usual evening social functions — the Honey Queen Reception, the Honey Queen Coronation, and the Annual Banquet have been arranged. A special treat will be a visit to Rawhide, Arizona's 1880's town located on the outskirts of the city. There, the visitors can try their luck at the saloon's "gambling" tables and witness shoot-outs in the streets. A haywagon will take the beekeepers out on the desert to a cookout under the stars with the lights of Phoenix in the distance.

Arrangements have been made with American Airlines for discounted airfares to the convention. For information and reservations, call 1-800-433-1790; ask for Star No. S-8020. Convention guidebook advertising and exhibit space are available through the Federation office. Convention packets will be mailed to Federation members for convention and hotel reservations. If you don't get a packet or need other information, contact the American Beekeeping Federation, 13637 NW 39th Ave., Gainesville, FL 32606, ph. 904-332-0012.

Convention Schedule Summary

Sat. Jan. 18 — ABF Executive Committee, a.m. ABF Board of Directors, p.m.

Sun. Jan. 19 — General session opens, p.m. Honey Queen Reception, evening.

Mon. Jan. 20 — Symposium on African Bees, Tracheal Mites, and Varroa Mites, conducted by the North American Committee, all day. Entertainment and desert cook-out at Rawhide, evening.

Tues. Jan. 21 — No Meetings. Tour Day — Tours available to Tucson and the USDA Bee Lab, the Grand Canyon, and Sedona in Oak Creek Canyon.

Wed. Jan 22 — General session, a.m. and p.m. Ladies Auxilary Brunch, a.m. Honey Queen Coronation, evening.

Thurs. Jan 23 — General session, a.m. Business meeting, p.m. Annual Banquet and Ball, evening.

Fri. Jan. 24 — ABF Board of Directors, a.m. ABF Executive Committee, p.m.

Sat. Jan 25 — ABF Executive Committee.

NEW YORK

The Annual Winter Meeting of the Empire State Honey Producers' Association will be held December 6th and 7th (a Friday and Saturday). The meeting place is the Hilton Motor Inn at the Junction of Rt. 81 and the New York State Thruway in Syracuse.

It is expected that the Commissioner of the Department of Agriculture and Markets, Joseph Gerace, will be present to discuss recent changes in the bee disease control in the state. Reports will also be given on the survey for Africanized bees and Varroa mites in the City of Oswego. Observations continue to be made on the tracheal mite infestation in the vicinity of LeRoy and there will be an updating on this situation too. This meeting is open to all interested beekeepers.

Continued from previous page

Louisiana

Our Convention will be held this year in the "Cajun City", Lafayette, La. The dates set for this year are Friday Dec. 6th and Saturday, Dec. 7th. Registration will begin promptly at 9 a.m. on Friday and the convention will get underway at 1:00 p.m. with our president's address to the membership.

Speakers at the convention this year will include experts from the various aspects of beekeeping, from the marketing industry, from the news media and many others which should be of interest to our membership.

For the first time, we will elect a Honey Queen for our state. Contestants from various parts of the state have entered, and one will be selected by a panel of judges at our convention dinner on Friday night.

Last year our convention hosted over 200 members and we expect an even larger number this year since our membership has grown considerably in the past year.

Our motel host this year will be the Holiday Inn North of Lafayette, La. Preregistration is suggested for all who plan to attend. The phone number to call for registration is: 318-233-0003.

Canadian Honey Council

The Canadian Honey Council office has changed to this new address:

Canadian Honey Council
Box 1566
Nipawin, Sask.
SOE 1EO

Linda Gane is the temporary secretary until the Canadian Honey Council Meetings in November.

THe Canadian Honey Council Annual Meeting will be held in Saskatoon, Saskatchewan at the Ramada Renaissance, November 20-22, 1985. Phone number for reservations is 306-665-3322.

Thames Science Center Sponsors Apiculture Course

The Thames Science Center in New London, Connecticut will sponsor a special program titled "AN INTRODUCTION TO APICULTURE" in November. The program is designed for non-beekeepers, hobby beekeepers, and anyone else interested in a fundamental course in beekeeping.

The program will start at the Science Center on November 5th at 7 p.m. and will continue on November 5, 7, 19 and 21st from 7 to 9 p.m. On Saturday, November 9, an expanded lecture will cover Seasonal Colony Management and will include a visit to a honey bee colony if weather permits.

The course instructor is Dr. Larry Connor, an entomologist who specializes in honey bes, and who operates Beekeeping Education Service in Cheshire, CT.

The course requires pre-registration. The fee is $65 per person, and includes a copy of C.P. Dadant's FIRST LESSONS IN BEEKEEPING. In addition, student will be permitted to purchase a home-study program at a reduced price.

The schedule for the program will be as follows:

Nov. 5th, 7 to 9 p.m. — The Life of the Honey Bee.

Nov. 7th, 7 to 9 p.m. — Starting and Maintaining Colonies.

Nov. 9th, 10 a.m. to 1 p.m. — Seasonal Colony Management

Nov. 19th, 7 to 9 p.m. — Beekeeping Problems: Diseases & Pests

Nov. 21st, 7 to 9 p.m. — Honey: Processing, Sale and Use.

The course fee will be $65 per person, with a minimum of 12 people needed to offer the program.

For enrollment information, contact: the Thames Science Center at 203-442-0391 or write Gallows Lane, New London, CT 06320. For course content information, contact Dr. Larry Connor, P.O. Box 817, Cheshire, CT 06410.

Biology Of The Honeybee To Be Offered Saturday Mornings

The Waterbury Branch of the University of Connecticut will offer the three credit course entitled BIOLOGY OF THE HONEY BEE (BIO SCI 249) during the spring Semester, starting January 20, 1986. The first class meeting will be January 25th. The course will last for 14 weeks. Classes will be held from 9 a.m. to 1 p.m., meeting in room SE21. Visits to various apiaries will be arranged.

The course covers the structure and function of the honey bee and its colonies, with emphasis on chemical communication within the hive. In addition, practical aspects of beekeeping will be taught.

The course instructor will be Dr. Larry Connor of Cheshire, CT. The course will be offered on Saturday mornings to provide availability of the course to individuals who otherwise would not be able to attend a traditional weekday course.

The course is of special interest to area beekeepers who may desire a college level course in honey bee biology. The course carries a prerequisite of an introductory college biology course, but this requirement may be waved by the instructor on a student by student basis.

For futher information, contact the University of Connecticut's Waterbury office at 203-757-1231 or write UConn, 32 Hillside Dr., Waterbury, CT 06710 or Dr. Larry Connor at the University.

BUY & SELL

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 and or 1.80p ($4.00 Overseas). 10 issues year- Editor, R. H. Brown, 20 Parkhurst Rd., Torquay, Devon, U.K. Advertising Secretary, C. J. T. Willoughby, Henderbarrow House, Halwill, Beaworthy, Devon, U.K. TF

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

BEE CRAFT — Official (monthly) magazine of the British Beekeepers Association. Contains interesting and informative articles. Annual Subscription $5.10 (Surface mail) and $7.10 (Airmail). The Secretary, 15 West Way, Copthorne Bank, Crawley, Sussex, RH10 3DS TF

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

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

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

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20% DISCOUNT off our regular 1985 prices. To qualify for this special EARLY BIRD DISCOUNT, all orders must be postmarked by midnight November 30th and must be accompanied by payment in full. Early placement of orders helps us to more efficiently plan our production and shipping schedules — thus saving you money. You can save shipping charges by picking up larger orders in your truck or station wagon. We are located on a major North-South interstate highway.

BABCOCK GOLDEN ITALIANS are large golden yellow bees that are easy to handle, very gentle and produce very large colonies. They are extremely good honey producers developed from my top honey producing hives. They are "THE MOST BEAUTIFUL BEES IN THE WORLD."

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Indicate your choice of race. Mixed orders will carry the quantity discounts.

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1- 9	$25.00	$20.00	$29.00	$23.20	$10.00	$ 8.00
10-25	24.50	19.60	28.50	22.80	9.00	7.20
26-up	24.00	19.20	28.00	22.40	8.00	6.40

Add for shipping packages via parcel post:

1-2 lb.....$5.00	3-2 lb.....$9.00	2-3 lb.....$9.00
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