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CONTENTS

Wishing You A Prosperous New Year in 1986

Gleanings Mail Box

As Time Flies By

Dear Editor:

Gleanings In Bee Culture is a magazine about bees that never grows old. How do I know? I stopped writing for *Gleanings* eight years ago. But my bee mail hasn't stopped yet. Nor do readers forget me. When they get to Honolulu, (the ideal vacation spot on earth), they call me up. Like old soldiers, beekeepers never die. They fade away. I am 89 now and haven't faded yet. In fact I am enjoying excellent health and feel like 60. And beekeeping never fades either. Beekeepers come and go and new comers take their places. As for beekeeping practices, they too keep changing and improving. You can't hold a new idea down and that makes beekeeping so interesting.

Man has kept bees through the ages. And during the 40 years I kept bees, or is it bees kept me, it has proven to be the greatest happiness and joy that no other hobby could give me. I had chickens, raised canaries, had racing pigeons, you name it, and I dabbled in all of them but when by accident I got the bee bug I was caught for life.

It takes years to get to know bees but you never know it all. Each year is a new year when it comes to bees and since each year is a different one and after you have a dozen of them under your belt with the bees you become very humbled indeed. Bees have a way of humbling you for they have a solution for every problem. And since every season is so different it brings different problems and the bees will keep you on your toes.

Only today I received a letter from a retired doctor in Rarotonga in the Cook Islands. Do you know where that is? Look it up. On a map of the Pacific Ocean you will find it South of Tahiti. Between Tahiti and New Zealand. Talk about out of the way places, there is one.

But the bee bug bites just as hard down there as it bites us here. Once I wrote in my column in *Gleanings* that Gleanings covers the earth, like some paint company in Cleveland claims to do. Well, Medina is not far from Cleveland. If I remember right I stated *Gleanings In Bee Culture* goes to 40 different countries. And in the 40 years I wrote for *Gleanings* I heard from most of these countries. Even from behind the Iron Curtain. For one beekeeper in Poland wrote, "We beehivers of the World are all friends held together by one little bee-cellar." And so it is.

And now I wish all of you "beehivers" a good New Year and many happy years ahead with your bees. And last but not least I truly believe that keeping bees makes for good health and longevity. So keep it up!□

Charles J. Koover
1434 Punahou St.
Honolulu, Hawaii 96822

Editors' Note: For 40 years Mr. Koover wrote a column "From The West". Many of you have asked about him.

Dear Editor:

My name is Roland B. Jarry. I live at 97 Wilton Street, Sprinfield, MA,, and I am a beekeeper, but I do it only at a hobbyist level for about five years now with about eight hives. I do collect honey bee paraphanelia, artifacs, skeps, etc., and I am also President of the Hampden County Beekeepers Association. I won the State Award for square comb honey in 1983 and then won the State Award again in cream honey in 1985 at the Eastern States Exposition, and I am a subscriber of the *Gleanings In Bee Culture* in which I thoroughly enjoy. Enough of my brief background.

My reason for writing this letter if all possible you can be of assistance to me. I recently came accross an old hand carved wooden printer block which claim to be in the middle of the eighteenth century, so I enclosed a print of it in this letter. Maybe some of your knowledgeable staff members can give me some idea of its origin age and what it was used on, or maybe one of your readers can identify and can give me some past history on it.

Roland B. Jarry
97 Wilton Street
Springfield, MA. 01109

South African Bee Journ

Dear Editor:

It was with real concern that I read the letter by Mr. Brian Adams, of Haydenville, Ma. suggesting cancelling the ad of the *South African Bee Journal.*

I am under the impression that we, as a country and beekeepers included have enough troubles without minding those of another country.

We already are sending billions of dollars (yours and mine included) for foreign aid. And importing almost everything we can use from other countries. But we certainly are exporting jobs.

Is it necessary, Mr. Adams, to dictate to them how to handle their internal affairs too?

Stuart Kuik
10806 Willowisp Drive
Houston, TX 77035

Continued on next page

Continued from previous page

LETTERS TO THE EDITOR

Dear Editor:

I suppose I could write you about something in each issue but November really got to me in a number of ways. I agree with the letter from Brian Adams regarding banning ads for the *South African Bee Journal.* I also objet to the letter from the South Africans looking to leave their problems behind and come to America.

Dr. Morse's Research Review of the "Yellow Rain Controversy" was very interesting. Richard Taylor's "Bee Talk" about the tracheal mites was stirring. Not that I agree with all he says all the time in his column or his answers to questions. I think he has an attitude which is all to common amongst expert beekeepers, they know it all.

And I'm definitely tired of reading about comb honey production. What so many "experts" forget is that environmental conditions can differ so drastically from one site to the next, even with little distance involved. What is true for Richard in New York is in no way true in Louisiana where I kept bees for 10 years or here in Arizona where I am now. Incidentally, the tracheal mite infestation in Lousiana occured from queens obtained from the original Texas source a full year before they were discovered in Texas, (according to personal conversation with the Louisiana beekeeper).

Dr. James Tew's remarks about the queen business moving from the South to up North left a lot unsaid. Labor costs would be very much higher and as queens are started as early as February down South, replacements for winter kills up North would be impossible to come by with any hope for them to build up as much strength in the first year if the queens are raised there starting, when? May? We'd all have to get it together and requeen in the fall when we're supposed to. I think Kona queen outfit in Hawaii has a great growth potential after the Africans arrive in the South. Although experts like Steve Taber (of ABJ) think they won't be a problem. I brought the gene pool to the USDA Research Lab in Baton Rouge, La. years ago so he should know. Only thing is we now have some bees in Louisiana you can't hardly work now and I'm not the only one thinking he's to blame. Regressing a bit here, the queens produced in the South are all too often the product of exploited minorities (a la South Africa) using illiterate Blacks and illegal Mexican aliens. Sure there are lots of family outfits producing good queens and packages and we as an industry didn't invent racism but we've "benefited" by it for many years of cheap labor.

Charles Mraz's Siftings was great. If anyone ever deserved a lot of money for research it's him. I hope he writes a book. But Charles, don't be alarmed by criticism, great minds have always been attacked by the small ones. I know a beekeeper who said the woman whose infant's death was attributed to honey botulism broke down and through her tears told him she was tired of lying to protect the doctor and the baby hadn't had any honey. A little bit of common sense is worth a lot more than any doctors degree. Mr. May should have a doctorate of common sense bestowed upon him by the many thousands of ordinary folks to benefit by his dedicated work. Hats off to him! On a related subject I found in Europe several years ago while briefly researching Varroa mites that there is a common folk but I've never hear that in the U.S.

I'd like to end this epistle with a tip for beginners, put a lot of smoke on your hands to work bees without gloves, save a long fingernail on each hand to remove stingers quickly and re-smoke the site. Keep Buzzin'.

Robert Cucullu
Box 301
Sedona, AZ 86336-0301

Dear Editor:

Brian Adam's intention to introduce politics into beekeeping is regrettable (*Gleanings,* November, 1985). His suggestion to cancel South African Beekeepers Association ads points that way. Why only South Africa, and not Soviet Russia, and for that reason some Arab states, Poland and some other countries as well? Something like 850 blacks have been killed in South Africa which, of course, is a horrific crime, but the number in Soviet Russia is 6 million, and the blacks in South Africa are less oppressed than whites in communist countries. Voice your protest there.

For goodness sake keep politics out of beekeeping.

John Petersen
69 Cheshire Road
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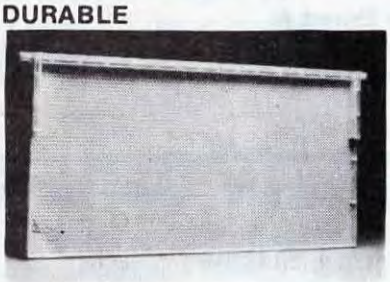

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The Monthly Honey Report

Dec. 10, 1985

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

Wholesale Extracted — **Reporting Regions**

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	1	2	3	4	5	6	7	8	9
60 lbs. (per can) White	40.00	37.00	35.00	34.80	48.00	40.00	38.00	38.90	42.50
60 lbs. (per can) Amber	38.00	33.60	42.00	30.00	36.00	35.00	30.30	36.16	37.80
55 gal. drum (per lb.) White	.52	.49	.41	.58	.64	.55	.55	.59	.58
55 gal. drum (per lb.) Amber		.44	.38	.50	.54	.52	.50	.52	.54
Case lots — Wholesale									
1 lb. jar (case of 24)	28.50	25.65	25.87	20.64	29.40	24.00	25.00	24.25	25.20
2 lb. jar (case of 12)	28.50	23.35	22.75	20.40	28.00	24.00	21.50	29.85	
5 lb. jar (case of 6)	27.50	28.15	23.75	31.80	28.50	24.00	21.50	24.73	24.60
Retail Honey Prices									
½ lb.	.29	.90	.74	.90	.90	.90	.85	.91	.89
12 oz. Squeeze Bottle	.90	1.24	1.31	1.25	1.46	1.35	1.35	1.24	1.19
1 lb.	1.50	1.45	1.52	1.37	1.51	1.55	1.52	1.64	1.40
2 lb.	2.70	2.67	2.72	2.47	2.71	2.60	3.00	2.83	
2½ lb.	3.35			2.85	3.95	3.25	3.50	3.49	
3 lb.	4.00	4.83	3.57	3.47	4.14	3.85	4.00	3.55	3.40
4 lb.	5.00	4.47		4.15	4.98	4.90	5.00	4.72	
5 lb.	6.00	6.50	7.93	5.39	5.75	5.80	5.90	5.53	5.25
1 lb. Creamed		1.75	1.57	1.29		1.39	1.50	1.60	1.40
1 lb. Comb	2.25	2.10	2.38		1.95	1.85	2.00	1.80	
Round Plastic Comb	1.50	2.00	1.63	1.65	2.00			1.65	1.75
Beeswax (Light)	1.25	1.35	1.15	1.25	1.21	1.25	1.17	1.11	1.50
Beeswax (Dark)	1.10	.1.15	1.05	1.25	1.13	1.10	1.10	1.03	1.25
Pollination Fee (Ave. Per Colony)	26.00	20.00	27.50	15.00	30.00	21.00	27.00	18.00	25.00

MISCELLANEOUS COMMENTS

REGION 1

Many bees will be lost this winter because beekeepers can't afford to feed them. The only way we see to increase sales is to lower our prices. The cost of production is too high to let this happen. If we could hire help for $60.00 per month we could sell honey for .40 per lb. and make a profit. It costs at least .60 per lb. to produce honey. Even our own government won't pay .60 per lb. if our honey is a little dark. Most honey produced in our areas is amber so we lose on every pound.

REGION 2

Honey sales continue very slow. Honey crop best poundage in several years but poor quality (due to honeydew). Bees going into winter in excellent shape.

Because of warm fall the bees are not consuming much honey at this time. Honey was darker this year because of buckwheat in area but milder and tangier tasting. A true wildflower honey. Recently made herbal honey and looking into creams made from beeswax, honey and vitamin E. It's time beekeepers diversified.

West Virginia Beekeepers suffered losses (heavy in places) from recent flooding.

REGION 3

Beekeepers feeding up until mid-November — sugar syrup. The wettest November in history. Over 7-8" of rain for November. Fall flow fair in some areas and poor in others.

Wet conditions during November causing all kinds of problems. Feeding and yard clean up stopped for past three weeks. No fall flow so some colonies need fed. Sales slowing considerably. The government program is on the skids.

REGION 6

The fall flow was fair in some areas but poor in others. Early feeding will be necessary. We are still very short on moisture. Fourteen inches below normal rainfall. Honey sales are steady with prices unchanged from last report. Bakery honey still in demand with very little for sale.

Rainy pattern established in mid October has continued through November. Work at bee yards has been very difficult. Some ho

Continued on next page

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MONTHLY HONEY REPORT

(Region 6 con't)

oval and extracting remains to be done! Hives are in fair to good shape for winter but the very warm weather has caused extra consumption by bees. Bakery and honey for gift packages has been moving well.

REGION 7

Honey sales have picked up due to cooler weather and Holidays. Demands from packers for clover honey is higher this fall. Winter stores for hives are very good due to rains and no frost and temperature 70°F daytime and 50°F at night.

REGION 8

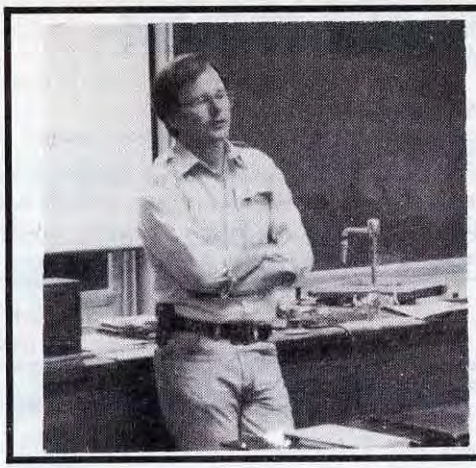
Fall flower spotty in some areas, some feeding necessary going into winter. Honey sales show small decrease.

Baking time and colder weather have perked up retail sales of honey. Specials are offered along with a few lower prices in some stores. Packers supplies have been adequate. Some sales to packers have been made on a cash basis and others on a time payment basis with prices adjusted.

Early snows and colder than seasonal weather have stopped any movement of bees. Most yards are now snowbound and some last minute feeding had to be postponed.

October rains and November snows terminated drought conditions in Montana, except in the northeast corner of the state. Conditions have improved but more moisture is needed in the spring. Fall flowers were terminated before bees could secure winter feed nectar and supplemental feeding was needed before winter storms and severe arctic cold engulfed the state. 100 year old cold records broken. It will be a tough winter on bees without sufficient honey in the pantry. Spring feeding will be necessary. Some colonies wrapped for winter and others sent to California and other S.W. states for winter. Bee meetings were concerned about Africanized bees and ticides. Drought and spraying for grasshoppers took heavy toll on bee colonies.

The Solitary Beekeeper



By DR. JAMES TEW.

The Agricultural Technical Institute Wooster, Ohio 44691

HONEY AND TOBACCO

November was wet — extremely wet — here in Ohio. Great plans, some that included prompt processing of honey, had to be postponed.

Now it's December and the weather has suddenly turned cold — very cold. As I write, the wind is absolutely howling; it's snowing; and I'm sittig beside a nice fire in my stove that's popping and cracking as it defends me from the cold night weather outside. My wife is away teaching an evening class and the kids are tucked away upstairs. The stage is set for an obnoxious habit (according to some) that I occasionally indulge myself — smoking my pipe. There's n one to complain about the heavy odor; no little kids to move all my "pipe things".

My favorite pipe is a 20 year old "Grabow" that my wife gave me before we married. My tobacco blend, believe it or not, is "Heather Honey". The tobacco package front, in brown tones, shows a honey crock with a ladle of honey nearby, curing tobacco leaves, crimp-cut tobacco, and the finishing touch — a pipe that has a wisp of smoke rising from it.

The tobacco pouch, when only passingly examined, actually appears to have heather honey in the pouch instead of tobacco. Unfortunately, it's not a particularly good smoke.

Only an individual that's spent the last 20 years in a cave is unaware of the medical concerns related to tobacco usage. I'll not get involved in that fray. However, as a beekeeper and a honey producer, it's interesting to note that the tobacco industry in the U.S. used nearly 2000 tons of honey in the tobacco curing process (Crane, 1975). You'd better know that those preparatory techniques are industry secrets. Most of the honey imported from Mexico and Central America go into tobacco products. Pipe tobaccos from England usually advertise heather honey as being a component of the curing technique.

It's not just pipe tobacco that uses honey. Chewing tobacco, smokeless tobacco and snuff are frequently found to contain honey. I was especially surprised to read that cigarette manufacturing processes frequently include honey. I never would have thought that. The hygroscopic characteristic of honey is the reason. Tobacco that is dry burns uncomfortably hot. Since honey absorbs moisture from the air, it keeps the tobacco moist and cooler burning or sweeter tasting. I couldn't help but try chewing pipe tobacco to determine if I could taste the sweetness of honey in "Irish Mead". I couldn't, but the reason may well have been that I tested only the smallest sample. But what do I know? That could be part of the industry "secret".

The relationship between honey and tobacco products is ironic. The growing tobacco plants seems almost totally disinterested in insect pollination relying (for the most part) on the procedure of self-fertilization (Free, 1970). Bees do visit tobacco blossoms but I couldn't find a reference of bees collecting nectar from the tobacco plant.

Enough of this. My wife's due home any minute now and my wood fire is burning low. I brought in some nice seasoned cherry pieces. Now there's an interesting relationship, too. A decent pollen and nectar source becomes fire wood for a cold winter night. I'd better save that one for another time.□

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Crane, Eva. 1975. Honey, A Comprehensive Survey. 608 pp. Heinemann. London, England.

Free, John B., 1970. Insect Pollination of Crops. 544 pp. *Academic Press.* New York, NY.

QUESTIONS & ANSWERS

Q. An article in the Jan. 1977 *Gleanings* suggests that better honey yields can be obtained by making the frames narrower and using eleven of these in the standard ten-frame hive body. What do you think?

Mike Bennett, Seattle, WA

A. I think it is a crazy idea. Departure from standard equipment always creates headaches. The key to increased honey yields is improvement management, not novel hives and equipment.

— Richard Taylor

Q. Is it possible for queens to be too prolific, so that they will produce too many bees which will then consume too much honey that would otherwise be harvested?

Steven Moritz, Dayton, Ohio

A. I have heard knowledgeable beekeepers express this view, but I reject it. I think a queen cannot be too prolific. A colony grows most rapidly in the spring, regardless of the queen. If the queen is very prolific, then you get a very powerful colony in time for the honey flows, and that is the secret of honey production.

— Richard Taylor

Q. Can you create a bee beard for yourself if you already have a beard?

Dick Johnson, Cranford, NJ

A. Sure, but what would be the point of it? This aspect of beekeeping lately quite popular, seems to be the one least worth cultivating.

— Richard Taylor

Q. I want to standardize my apiary, and have one jumbo brood chamber. Is there any good way to get rid of it?

Dave Bacon, Mickleton, NJ

A. You could shake bees from the combs, cut the combs down to standard size and tie them into standard frames with string, letting the bees get them fastened in and repaired, but it wouldn't be worth it. Or you can just use standard supers over the jumbo brood chamber by nailing strips of wood over the top edges of the jumbo, lengthwise, leaving an open middle of the correct standard size. It would be a funny looking bee hive, but there would be nothing else wrong with it, and the bees would think it was just great.

— Richard Taylor

Q. My four hives are about seventy-five feet from my garage and one hundred twenty-five feet from my white house. Is there some way I can change their flight pattern, by turning them around or moving them to another part of my yard, so they will not spatter the house and my freshly washed and waxed car with their droppings?

Russell E. Ericson, Snyder, NY

A. Not really. Bees have no real flight pattern when they take wing in the spring to relieve themselves. They just head for the nearest open spaces and let go. This is normally a problem only for one or two days in the early spring, however. I suggest you have your car in the garage on the critical days, hose down the siding of your house, and be thankful that it is you and not some neighbor who is getting it.

— Richard Taylor

Q. Two of my colonies developed laying workers this year, and had nothing but drone cells. I destroyed the colonies. Will I have to replace the combs with their new foundation?

Walter Prahl, Murdo, SD

A. No. The bees will clean them out and use them for worker brood.

— Richard Taylor

Q. Which is preferred, requeening in the fall or spring? And how late should it be done? Is it better to requeen from one's own hives, or use commercially raised queens? And which are most gentle and productive?

Marshall Slotterbach, Sellersville, PA

A. It would be better to requeen in the spring, early or mid-May in your area, before swarm preparations. The mood of the bees is much better in the spring, the beekeeper's frame of mind is better, and the hive population is much smaller than in the fall. Use commercially raised queens, which you will know are properly mated and will be on hand when you want them. My bees are Italians, mostly, but friends of mine get very good results with Carniolans, which are very gentle.

— Richard Taylor

Q. How do you make a swarm funnel and swarm box?

Joe Wharton, Fort Worth, TX

A. Any tinsmith can easily make up a swarm funnel. The diameter should be aobut two feet and the neck about five inches. A large tin can with ends removed makes a good neck. Funnel itself can be either round or square. The swarm box can be a hive body screened on both sides, with a hole a bit larger than the funnel neck. Swarms are shaken through the funnel into the box and then hived at the beekeeper's convenience.

— Richard Taylor

Q. Since I cannot wire the foundation in frames used for cut comb honey, how can I make the foundation hang straight in those frames?

Brian Hardie, Kokomo, IND.

A. You can use half sheets, or even shorter ones. If the frames are then carefully and closely spaced, the bees will build the combs down straight. Or you can buy support pins. These are split pins that push into the holes on the sides of the combs, holding foundation in place.

— Richard Taylor

1985 Queen Quality Questionnaire Summary

This past spring, a limited survey of 30 beekeeping operations was done to monitor the quality of honey bee queens entering Manitoba from the United States and New Zealand. The survey was sent to selected beekeepers who were known to import packages and/or queens, and was largely represented by commercial operations. Twenty-one responses (70%) were received. The results of the survey follow.

Package Colonies

Sixteen of the beekeepers indicated that they hived a total of 8,350 packages this past spring. The percentage of queens that failed during the first month after the packages were hived averaged 3.7% and ranged from 0-10%. All persons indicated that they had received their packages from the continental U.S., the majority coming from California (81%).

Wintered Colonies

Seventeen beekeepers indicated they they wintered a total of 8,371 colonies in 1984/85. Ten of them requeened 1,596 colonies this spring, which represents 19% of the total. Queen failure during the first month after the queens were introduced to the colonies averaged 13.7% and ranged from 0-60%. This relatively high figure is largely attributable to one shipment of New Zealand queens that was received by one beekeeper. All ten beekeepers imported queens from the continental U.S. In addition, three of them obtained queens from Hawaii while one imported queens from New Zealand.

Fourteen beekeepers reported that they made a total of 5,477 new colonies by dividing their wintered colonies. Under these circumstances, queen failure one month after introduction averaged 7.1%, and ranged from 0-25%. Once again, the majority of queens for these colonies originated from the continental U.S., with four shipments originating from Hawaii and two shipments from New Zealand.

From the Manitoba Beekeeper

A.T.I. Dedicates New Bee Lab

The Ohio State University Agricultural Technical Institute officially opened a state-of-the-art bee laboratory Wednesday, November 20 at 1 p.m.

The 5,000 square foot bee facility houses classrooms, faculty offices, a honey extracting lab, and an indoor dock for receiving bees and hives. The building also features a special "hot" room, maintained at 95 degrees, for warming and preparing honey for extraction, and a diagnostic lab for analyzing bee diseases, testing honey and pollen, and artificially inseminating queen bees.

James E. Tew, associate professor of agricultural business technology, says the new facility clearly establishes Ohio as an international center for beekeeping and honey processing. "It is the only lab in the U.S., and one of the few in the world, directed soley toward teaching and applied research," he said. "Our lab has more than 200 bee hives and one of the largest areas devoted to honey processing and production. Students who participate in the bee program will receive strong, hands-on training in all phases of beekeeping."

Among the guests attending the dedication ceremonies will be: Edward H. Jennings, president, The Ohio State University; Max A. Lennon, vice president, agricultural administration, The Ohio State University; and Dale L. Locker, director, The Ohio Department of Agriculture.

The formal dedication, inlcuding ribbon-cutting ceremony, will last approximately 30 minutes. Self-guided tours of both facilities will follow dedication ceremonies.

A.T.I. is located on 35 acres southeast of Wooster, adjacent to the Ohio Agricultural Research and Development Center. For more information on a two year associate degree program in beekeeping or their next two day short course, call 1-800-647-8283.

The main entrance of the New Ohio State University Bee Lab at the Agricultural Technical Institute in Wooster, Ohio. On the left a Bobcat is parked with a pallet of hives. The University has gone all out to equip and support the Institute's 2 year associate degree program in beekeeping.

Gordon Rudloff (left) Ohio State Apiarist chats with a local beekeper in the extracting room.

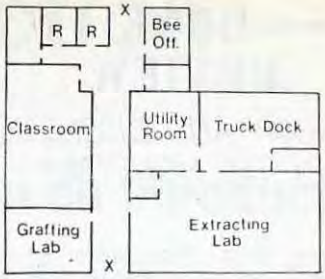
Dr. Tew talks with local reporters in the classroom during the open house after the dedication.

More photos on next page

Continued from previous page

Students leaving the lab during the open house. On the left was a replica of the original Langstroth hive.

Newly elected Ohio State Beekeepers Association president Jim Thompson checks out the grafting room microscope.



The floor plan for the new bee lab.

BOOK REVIEW

ANATOMY AND DISSECTION OF THE HONEYBEE

Anatomy and Dissection of the Honeybee by H.A. Dade was first published in 1962 and reprinted in 1977. In the reprint admendments were made mainly to pages xi to xv, in the light of new knowledge, but no further revision was needed except where prices and addresses quoted had become out of date.

The stock of the 1977 reprint is now exhausted, and with demand continuing unabated, a further reprint has been commissioned. Minor changes have been made in the introductory pages (for example, the errata for page 47 have been made clearer), but the main text remains the same as the 1977 reprint.

The 1985 reprint of *Anatomy and Dissection of the Honeybee* is available from the International Bee Research Association, Hill House, Gerrards Cross, Bucks SL9 ONR, UK, and the price has been held at $17.50 or US $24.50 postpaid.

ACARAPIS WOODI: THE MODERN APPRAISAL
by Dr. L. Bailey
(I.B.R.A. Reprint M116)

The acarine mite, *Acarapis woodi,* has been blamed for many losses of honey crops and colonies of bees. In his article in *Bee World* no. 3, 1985, now published by the International Bee Research Association as a reprint, Dr. Bailey, a world authority on bee diseases, stresses that the presence of *Acarapis woodi* is not a disaster. He reassures beekeepers that it is not a primary cause of poor colony performance, and that simple management techniques can greatly alleviate the situation.

In Britain the number of colonies has decreased since 1925, which has led to more forage being available per colony, and Dr. Bailey maintains that this is the cause of the observed decline in infestation by *Acarapis woodi.* The mite has recently reached the United States from Mexico, and figures quoted show that the present high infestation there occurs in States with a high colony density.

Dr. Bailey believes that in order to control acarine disease colonies should be kept only where they have sufficient forage. He discusses the control of the mite by modern chemical methods, and predicts that the present efforts to find treatments which are completely safe — and which do not leave residues in honey and wax — will continue. These methods are outlined.

Acarapis Woodi: A Modern Appraisal is available from the International Bee Research Association, Hill House, Gerrards Cross, Bucks SL9 ONR, UK price 60 p or US $1.10 postpaid.

Cook & Bake With Honey

by AMOS ARBEE

I recently heard something on the T.V. which quickly "caught on" with me if you will. It went something such as, "If you can alter it, then alter it if you cannot alter it, then you must learn to live with it."

Well of course there is no immediate need to whatsoever to be concerned with applying this particular cliche to baking and cooking with honey for all practical purposes. This of course is not to imply that occasionally one must alter a little here and there depending entirely upon the recipe being used.

However, generally speaking, honey can be substituted cup for cup in place of sugar. A little reminder would be that where more than one cup of honey is used in any given recipe, to add ¼ teaspoon baking soda for each additional cup of honey used. Also most baking recipes are improved by use of a mild type of honey.

"HONEY YOGURT CAKE"

1/2 cup butter
2/3 cup honey (mild flavor)
2 eggs, beaten
2 tsps. lemon rind (chopped fine)
1 cup your favorite plain yogurt
2 cups sifted all-purpose flour
2 tsps. baking powder
1/2 tsp. baking soda
1/2 tsp. salt

Cream butter and honey very well on electric mixer until creamy and light. Add eggs, beating well after each addition, then add lemon rind and beat again. Stir in yogurt. Sift flour, baking powder, soda and salt into the yogurt mixture, beat again until smooth. Place in a greased (9" square cake pa
Bake in preheated oven at about 350°F) for about 30-35 minutes.

Cook for 5 to 10 minutes. Remove to cooling rack and if you wish sprinkle with confectioners' sugar. Best if served while slightly warm.□

Safe Queen Introduction — Every Time

I announced that I never, ever lose a queen on introduction

by STEVE TABER of TABER APIARIES

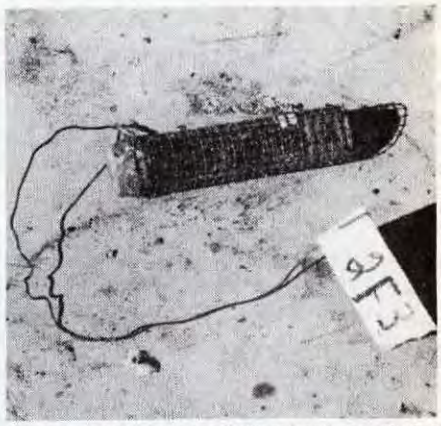
At the EAS shortcourse held at Lancaster, PA, this past summer I lectured on the subject of safe queen introduction and I could see much disbelief shown when I announced that I never, ever lose a queen on introduction. Never, ever lose a queen? It's not fast, it's not cheap and it's not automatic but it always works. It involves visiting the same colony of bees several times which makes it expensive. Our method is used to introduce several thousand virgins and several hundred mated queens every year.

First the biology involved: remove the present queen in the colony or if the colony has been queenless for a long time give them a comb containing eggs and just-hatching eggs. It is especially important if the colony has laying workers that they receive very young brood. Date the event. Regardless of what your bee book says about eggs hatching in three days, remember biological variation and assume that the last egg won't hatch for four days. Again, forget what the book says about maximum age of larvae that bees can raise a queen as being three days. You assume four days which add up to eight days after the queen is removed the bees can start to raise a queen from brood in the hive.

To illustrate, suppose you killed the queen and you have placed the new queen in the brood nest in a cage. Three days later you examine the hive and the bees are balling the cage trying to kill the queen. You go through the hive and destroy all queen cells. Come back four days later (total now of 7 days) and bees are still balling the introduced queen, so again you destroy all queen cells. Now come back three weeks later and lo and behold the bees have killed the queen in the cage and you have a mated, laying runt of a queen in the hive.

The next thing about bee biology you need to remember is that if you do not destroy the queen cells by the 10th day after removing a laying queen you will have a virgin emerge on the following day. Only limited research has been done on queen introduction and that was by Tibor Szabo of Alberta, Canada, some years ago working for his PhD at the University of Guelph in Ontario. I summarized his work in an article written for ABJ several years ago. Readers desiring a copy will receive one with the receipt by me of a self-addressed, stamped envelope. Current research going on in many institutions around the country will shed a great deal of light on why queens are rejected or accepted. This will involve work in the field of sociobiology of the recognition by bees of a queen more nearly related and easier to introduce, or a queen more distantly related and more difficult to introduce. Research also involves studies of pheromones that cause bees to ball a foreign queen so that there is hope for the future of an automatic, one-visit-to-the-hive introduction method that will always work. However, until then there is our method which does work.

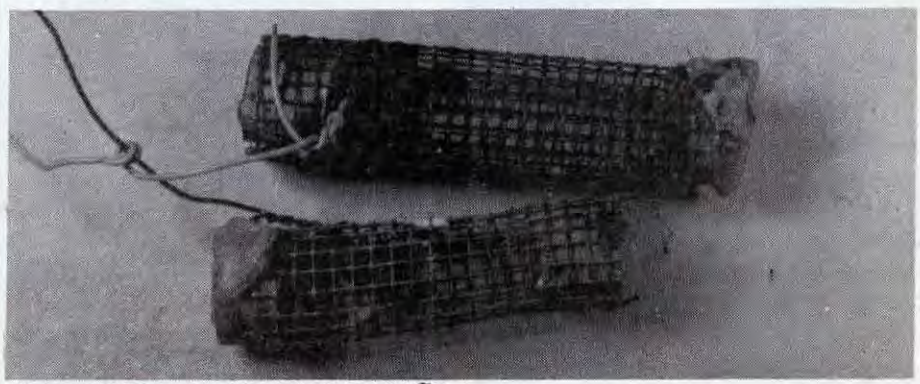
Remove the queen and introduce the new queen to bees in the center



Finger shaped cage made from hardware cloth 8 mesh. The label indicates the mother (dam) of this virgin to be introduced.

of brood area using my finger-shaped introduction cage. Return in three to five days and 60% of the time no bees will be balling the cage, in which case the plug is pulled and queen released. The queen will immediately start egg laying and moving about the brood destroying queen cells but she won't find them all. So before releasing the queen go through every comb removing cells.

In those 40% of colonies that are trying to kill the queen, remove all queen cells and check for the presence of a second queen in the hive. When we return to this apiary in another four to six days almost all colonies will have



Close up of finger cage. The soft copper wire lets me place the cage exactly on the comb where I want it with the wire then bent over the top bars of the comb.

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accepted their new queen. Again repeat the procedure of removing all queen cells before pulling the plug to release the queen. However there will always be one or two colonies with bees still balling the cage. Again remove all queen cells and come back in a week. At one time I had a colony that continued to ball the cage for over three weeks.

When you have one of these extreme cases you should give the bees another frame of young brood after two weeks. This seems to completely confuse all the bees balling the queen and almost always the queen will be safe to release the next day.

Why do bees ball a queen anyway? Someday we will know but not yet even though there has been some research done on the subject. Yadava and Smith (1971) thought that there was a pheromone released by the queen causing the aggression of the worker bees. This was not confirmed by Robinson (1984). He found that not all foreign queens were balled and some of them that were balled were not balled all the time. And then he found that some were killed by the balling bees.

Unfortunately we don't know a lot about the queens in Robinson's experiment — how closely they were related to the bees in the hive and the age of the queens used in his experiments. A queen that has been laying 1400 eggs a day for four months is an old queen and would be much easier to introduce than a four-month-old queen that had been confined to a queen bank and not laying eggs at all.

In some experiments that Roberts and I did in 1965 we introduced laying queens of different hybrids into different colonies but all colonies of the same size. All queens were directly introduced. We did this 292 times with no evident balling and with no loss of queens.

The next thing that needs explaining is the balling of workers in the hive where there are bees balling the queen. I have seen that event a number of times. Next time you are in a hive where the bees are balling a cage with great intensity and aggressiveness look along the lower edges of combs below the caged queen and on the floor board for groups of bees balling workers. Lots of questions — few answers.□

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Roberts, W.C. and S. Taber. 1965. Egg weight variance in honey bees. Ann. Ent. Soc. Amer. 58:303-306.

Robinson, G.E. 1984. Worker and queen honey bee behavior during foreign queen introduction. Insects Sociaux. 31:254-263.

Yadava, R.P.S., M.V. Smith. 1971. Aggressive behaviour of *Apis mellifera* L. workers towards introduced queens. I. Behavioural mechanisms involved in the release of worker aggressi... Behaviour 39:212-236.

Bundles of finger shaped cages ready to go to the bee yard. These cages contain virgins which have emerged in the last several days to be introduced. When queen is released the wood queen cell block is removed and the cage containing the queen is hooked over the side of the nuc or colony permitting the queen to crawl out.

Research Review

By DR. ROGER A. MORSE
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Cornell University
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Beekeeping and Bee Research In China

Western (European) honeybees were taken into China early in this century. In 1949 there were half a million colonies and today there are five million. The smaller, native honey bee, *Apis mellifera*, is still popular in some areas.

In 1958 an Institute of Apicultural Research was established in Beijing. It has a staff of 120 including about 70 students who are doing research. The Institute has five departments: Bee Genetics and Breeding, Beekeeping Technology, Prevention and Cure of Bee Diseases, Honey Plants and Bee Products, and the Native Chinese Bee.

Most apiarists are small family-run operations with 50 to 80 colonies. There are some larger operations with hundreds or thousands of colonies. In addition to honey production, there is emphasis on the production of royal jelly and propolis. No mention is made of pollen or bee venom.

The Chinese use a number of chemicals to control varroa disease, including one containing sulphur. The article cited below does not reveal anything about the chemistry of the other materials except that they are used as fumigants and sprays. Two treatments are made in the fall. The first done in the early fall; the brood is removed since no fumigant will penetrate capped cells and there could otherwise be a reservoir of mites in such cells. The second treatment is done in the late fall in the broodless period. (In northern climates honeybees have the least amount of brood in October and November; often there is no brood at this time of year.)

Still another method of controlling mites is to cage the queen for 21 days until all of the brood emerges. The colony is then given a chemical treatment. If either of the above methods is properly done the colony remains mite free for a year according to the reference cited below.

A more complete report on beekeeping in China will be published shortly with the Proceedings of the Third International Conference on Apiculture in the Tropical Climates; it will be available from the International Bee Research Association.

Xianshu, L.
Beekeeping in China. Newsletter for Beekeepers in Tropical and Subtropical Countries, NO. 7:1-3. 1985.

The Storage of Water By Honeybees

Most textbooks state that honeybees do not store water, rather they collect it as needed. That statement is not exactly correct. One of my students was rumaging through the literature and came upon the article I cite below; it is as timely today as when it was written and is worthy of review.

It is generally stated that honeybees use water for two purposes: To dilute honey fed to larvae and to cool the hive. However, in semi-arid areas, for example the southwestern part of the country, beekeeping is extensive and bees have special problems. A third need for water is to keep the relative humidity in the hive at the correct point for advantageous brood rearing.

It is stated that honeybees will not work in the field when the temperature is above 90°F (35°C) and the relative humidity below 50%. In observations made in southwest Texas, in June, it was noted that bees would collect dew very early in the morning but shortly after sunrise they would cease to fly. The temperature would often reach 110°F at mid-day and at the same time the humidity was between 25 and 50 percent. Honeybees apparently have the ability to anticipate such extreme conditions and to prepare for them. In tests with hygrometers it was found that as the relative humidity drops water collection increases. The stored water is placed on the soft spongy brood cappings that remain moist all day.

For the most part water is stored in "small cell-like enclosures on the top bars." There are similar cavities on the upper surfaces of brood and brace comb. The amount of water a colony will collect under these conditions can be measured with scales and may be up to one pound for a colony in three supers. I presume that in dryer areas, such as parts of Arizona, that even more water may be collected. The need for supplying water for bees kept in hot, dry areas is clear.

Parks, H.B.
Water storage by bees. Report of the State Apiarist (Iowa), pages 53-6. 1929.

Honeybee Foraging At Night

African honeybees are known to sometimes forage at night as does the large Asian honeybee, *Apis dorsata*. Studies were made to determine how the bees could orient after the sun had set.

It was observed that bees need the light of the moon to see to fly at night. Flights took place only when the moon was half full or larger. However, the bees did not substitute the moon for the sun in their orientation. By a means not known they could still locate the position of the sun, perhaps by the same method used to determine the position of the sun on a cloudy day.

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RESEARCH REVIEW

We do not know why bees sometimes forage at night but I have seen them do so in Asia. They do not do so all night as far as I could determine but will fly well after the sun has set and long before it rises in the morning. It was never clear if the temperature was more favorable or if it was this time the plants were secreting the greatest quantity of nectar.

Dyer, Fred C.
Nocturnal orientation by the Asian honey bee, *Apis dorsata.* **Animal Behavior 33:769-74. 1985.**

BOOK REVIEW

Book Review — *Honeybee Ecology, A Study of Adaption in Social Life* by Thomas D. Seeley. Princeton University Press, Princeton, NJ. 201 pages. 1985.

Practical, money-making beekeeping developed rapidly and successfully after Langstroth's discovery of bee space in 1851. Changes took place so fast that no one stopped to ask the bees what they preferred in the way of a nest. The situation was complicated because it has been only in the past few decades that there have been a sufficient number of hollow trees anywhere in Europe or North America that anyone could study the natural nest. There are few, if any, hollow trees in the manicured forests of overcrowded Europe today.

The situation is different in the northeastern United States where many farms have been abandoned. Unattended woods, with decaying and hollow trees, such as those that existed in Europe where honeybees evolved centuries ago, are now common. Ithaca, New York, and its surrounding hills is one such place. It is clear, looking back, that the area never should have been opened to farming. The soil is wet, heavy and acid. It is an ideal location to study the natural nest of the honeybee.

Dr. Thomas Seeley of Yale University, has focused "on how honeybees live in nature"; it is a new approach to honeybee studies. His book is "dedicated to the honeybees living in the forests around Ithaca".

There is no question that most honeybee research has been concerned with how to produce more honey or to control colonies to obtain maximum benefit for pollination. However, honeybees did not reach their present state because of these goals. What man does is not always in the bees' best interest.

Study of honeybees in trees in the vicinity of Ithaca shows clearly that what happens in nature is quite different from what takes place in a beeyard. A "typical" colony in the wild swarms once a year and survives the winter on about 45 pounds of honey. Production in a man-kept apiary is two to four times that amount and depends in large part on how successful man is in preventing swarming.

Beekeepers who strive to develop a better management scheme will find Seeley's Chapter 4, **The Annual Cycle of Colonies,** especially helpful. It is explained that winter brood rearing is normal. When brood rearing begins in the middle of winter, a colony consumes about as much energy as is produced by a 20 to 40 watt incandescent lamp. The amount of honey consumed by wild colonies in winter is less than that used by man-kept colonies, at least if beekeepers follow the recommendations in most textbooks.

An important generalization understand is that the bulk of the honey stored is collected over a very brief period. Chapter 7 deals with **Food Collection.** It views "a honeybee colony as a machine which is designed to extract energy and other resources from the environment". Seeley reviews what has been done and interprets this in light of present thinking. The chapter concludes by stating that so long as the reward is high, honeybees work small patches; "when conditions deteriorate the bees are restless and jump long distances between flowers".

Other chapters include **Reproduction, Nest Building, Temperature Control** and **Colony Defense.** A final chapter discusses tropical bees; these are little known bees. Further study of them, Seeley writes, "will enable us to pinpoint the ecological origins" of these species.

Seeley's writing style is clear. His is an easy book to read. Honeybees even in our man-made colonies, are still wild and dependent on the whims of natural honey flows. This book does not tell one how to keep bees, however, I suggest that reading it will give every beekeeper information that will allow him to understand bees and to better manage colonies. □

Using Bees To Monitor Air Pollution

Jerry J. Bromenshcenk, Associate Professor of Research at the University of Montana's Zoology Department, sumbitted an article recently published in the ***Western Wildlands*** fall issue explaining his work in studying the honey bee as a monitor of air and water pollution in a wide geographical area.

Man has long used lower animals as detectors of environmental contamination. A good example is the old practice of miners taking canaries into the mines because they were especially sensitive to toxic gases. If they would become ill or drop over, the miners knew it was time to get out of the mine fast.

Man has been studying the sensitivity of bees to toxic chemicals as far back as the late 1870's. It was about that time that man-made insecticides were coming on the scene. The active ingredients of these early formulations were inorganic compounds such as arsenic, fluoride, lead, sulphur, copper or plant derived chemicals such as nicotine and pyrethrum. Many of these chemicals were used up until the 1940's. Beekeepers in the early days were upset when they found their bees dying as we are today and naturally turned to chemical scientists to help learn what was causing the bees to die. As a result of these years of close alliance and the gathering of data on bee losses, there is a large body of information about the effects of many chemicals on honeybees as an organism. This is true of chemicals that originate from industrial production as well as chemicals applied for pest control.

Professor Bromenshenk's interest in bees started in 1974 as a part of some multi-disciplinary investigations of the bioenvironmental impacts associated with coal fired power plants. This early work was to determine whether emissions from power plants about to build in the southeast part of Montana might damage the thousands of honeybee colonies that were located there. At the time he didn't realize that these early investigations of fluoride in bees would lead to 11 years of research and the eventual realization that the honeybee is an ideal subject for environmental monitoring. Since that time hundreds of beekeepers have become involved in assisting him and other investigators have become interested in bees as monitors.

In this early work he found that honeybees are exceptionally good tracers of fluoride and through them he could detect significant increases in fluoride as far as 13 miles down wind from the power plants. His finding in 1980 showed him that bees were also good monitors of water quality.

In 1981 he intensified his study of honeybees as monitors of other chemicals. To do this he used two techniques. Measuring the amount of chemicals in or on the bodies of bees in pollen and he also measured colony responses such as changes in brood rearing, survival rates, honey production and the total number of bees. The first technique is used to detect and map pollutants. The second gives an early warning of the presence of hazardous chemicals. Using a statistical approach called Kriging, it was possible to map an array of chemicals over an approximately 3,000 square mile area of Puget Sound.

Bees have also been found to pick up radioactive substances. Back in the years when the Chinese were testing high atmosphere atomic weapons, radioactive material was found in bee tissues as long as a year after the explosions. The Los Alamos National Laboratory used bees for years to monitor possible leakage of radioactive materials from underground sources. These were also used at the Hanford Laboratory site to monitor several chemical processing facilities and a nuclear reactor.

The mapping process of the geographical areas is done using existing beekeeping operations through the cooperation of the local beekeepers. In areas where existing colonies are not available "mini-hives" are used which are about the size of a mail box. Whether a colony is small or large, it has a distinct advantage over the other sampling methods. Each of these little colonies is able to provide a sample from an area of 10,000 acres.

Since a colony of bees travels over 55,000 miles to gather enough nectar to make a pound of honey, "11 round trips from San Francisco to New York", it would be very costly to duplicate this same effort with human sampling techniques. This, coupled with the fact that honeybees have a low tolerance for many chemicals, makes them extraordinarily good large-scale monitors.

Since bees are also a part of the environment, this work is also helpful in letting beekeepers know the effects of pollutants.

The intent of pollution control is to protect living organisms and bees, as monitors, are now playing a very important role in helping us do that.□

HONEY IN AMERICA'S SCHOOLS, Part IV
What Does The Future Hold?

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

Imagine the following scenario. A certain industry is in bad need of market expansion. Sales are mediocre at best and producers hold little but apprehension for what the future may bring. In steps, a certain kindly benefactor who says:

> *"I'll buy all of your product which isn't disposed of through the normal channels. I'll pay to have it processed and then offer unlimited quantities of the product to a market of some 24 million consumers. This market will be a non-traditional one where a free supply of product won't displace any current sales. Oh, and don't worry about containers and freight to the ultimate destination, I'll take care of that too. Now, I must caution you that we will offer more product than this market will use at the outset, so the balance will be distributed to other programs and I can't promise what effect that might have on your sales. Therefore, I can assure you that whatever effort you expend on promoting your product to the group first mentioned will be like money in the bank. Moreover, those 24,000,000 consumers will be youngsters that may one day become your customers."*

Now, back to reality. Such a scenario is purely imaginary. There cannot exist such a benefactor nor such beneficiaries, right? WRONG, the above story is a fairly accurate case history of the honey loan program in recent years and how government's unwillingness to act sensibly about our import problem on the one hand has resulted in a fantastic opportunity for our industry on the other. That is, namely the offering of commodity honey to the school food service. The only difference is that Uncle Sam didn't necessarily tell us how much we could benefit by promoting commodity honey in its best avenue of distribution — the school food service. But Uncle figured that our industry was smart enough to realize that on our own. And fortunately the majority have.

In Part I we looked at national efforts at promoting honey in schools, mainly through the annual American School Food Service Assoc. conferences. In Part II we gained insight from other food industry personel and school food service personel. Last month, Part III dealt with a broad scope of potential efforts on local, state and national levels and how YOU can help. Now in this fourth and final article, the author will do some prognostication about what may lie down the road for honey in America's schools

Three main factors will influence this future; our industry's action, government's action and the reaction of the SFS to the first two parties. Fortunately the latter is not so difficult to predict as perhaps the first two are. Based on current trends in their use of honey, the SFS should be expected to continue to react favorably to our product and our promotional efforts. As pointed out before, these folks have adapted swiftly to using honey and are growing more accustomed to it all the time.

What about the government's actions? The eighty-four dollar question here is, "How much longer will Uncle Sam continue to take over honey?" Over the past 36 year history of the honey loan program, it is probable that one could rarely ever have stated with full confidence that the program would continue beyond a very immediate future. But at this writing that is more than ever and this author has no crystal ball, nor the advantage we all will have of seeing the outcome of the '85 Farm Bill by the time this article is read. There are, however, three things of which I am certain in this regard. One is that if the USDA ceased to take over honey after the 1985 crop, government stocks wold be sufficient to sustain the flow of commodity honey into the school for at least another three years. Secondly, if honey ceases to be available as a bonus commodity, it is all the more important to make the most of this promotion in the meantime. The third is that if Uncle Sam ceases to take over honey via the loan program, it doesn't necessarily mean that honey can't be made available to the SFS as a commodity by the USDA. That's where we will shift our focus to the future efforts of our own industry.

Food products find their way into the SFS in one of four ways. Section 32 of Public Law 74-320 allows the government to remove surpluses of perishable nonbasic commodities from normal channels. Usual products in this category are fruits, vegetables, meats and poultry.

Section 416 of the Agricultural Act of 1949 applies to foods acquired through price support programs. These are usually basic commodity items such as dairy products, grains, oils, peanut products and HONEY. Section 416 is the current vehicle that moves commodity honey into the school food service (and other feeding programs as well).

Sections 6 and 14 of the National School Lunch Act are the other two vehicles for moving commodities specifically into the school food service. Section 6 requires USDA to provide a minimum level of commodity assistance to the

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HONEY IN AMERICA'S SCHOOLS

States, while Section 14 gives USDA special purchasing authority to buy commodities outside the areas of surpluses (Sec. 32) or price supports (Sec. 416). If Uncle Sam suspends honey purchases under the honey loan program (Sec. 416), then it is within the realm of possibility that USDA purchases of honey could be accomplished for the school food service through Section 6 or Section 14. A wide range of factors influence what commodities are purchased under these provisions, but one thing is certain with regard to the likelihood of honey being purchased. The better the job that the beekeeping industry does of promoting honey in the schools under our current circumstances, with honey provided as a free bonus commodity, the better will be the chances of a contract being negotiated with USDA under Sec. 6 or 14 should the need arise. Creating the greatest possible demand for our product in the schools is paramount.

As one of the three main factors influencing the future of honey in America's Schools, the actions that the beekeeping industry will take care are not exactly certain. On the national level, there has been an unbelievable amount of debate over whether or not the American Beekeeping Federation should continue funding a manned booth at the American School Food Service Association conference. Some suggest that an unmanned booth is an indispensable part of what should become a three front (national, state and local) promotion that provides an awfully lot for a $4000 budget. That money buys (1) booth space, (2) several thousand quantity recipe packets, (3) puts booth workers at the conference site, (4) facilitates personal contact with a broad cross-section of school food service personel and (5) facilitates personal contact with a myriad of food industry representatives who are users or potential users of our product. And all of this on a $4000 budget. Spread across a target audience of 24,000,000 that comes to a unit cost of 16-thousandths of a penny per contact per year! (And actual expenditures on the '85 conference were some 20% under budget!) Tight budget or not, this meager amount of funds must and will be found to continue ABF's participation in the '86 Detroit ASFSA conference.

U.S. beekeeping industry is admittedly a small one with limited resources. But we dare not underestimate what can be done with those resources by an industry that produces some 200 million pounds of product in an "average" year. Others, even smaller agricultural groups, seem to set an example worth considering when it comes to the ASFSA. Numerous ag producers are represented at the annual conferences. In Philadelphia, one such booth was occupied by the California Dried Fig Advisory Board. They represent 130 growers who produce about 10,000 tons of product per year! The Board is part of the Dried Fig Marketing order (financed by a check-off) and it was interesting to learn that the man in charge of the booth was himself a fig producer. The California Cling Peach Advisory Board ran another booth and featured not only canned peaches, but a new frozen peach pack for which they have recently negotiated with USDA to supply on a three year trial contract! This Board represents the producers of about 500,000# per year of California cling peaches. The point here is that these commodity groups, even smaller than our own, have a high regard for the importance of promoting their products in the school food service. A spokesman for the Cling Peach Board said that they are doing some 18 food shows per year including the ASFSA and some of the larger state school food service shows. He went on to say that the Board "feels that such shows are very beneficial."

The California Cling Peach Advisory Board promotes a new 40# pack of frozen peaches.

At the '85 AFB convention in Tampa, Gene Poll, executive vice president of a large New York Public relations firm spoke several times of the importance of their promotional efforts for the Florida Citrus growers in the school food service. Undoubtedly, if the Honey Research, Promotion and Consumer Information Act comes to fruition, promotion of honey in the American School Food Service should be one of its objectives.

As pointed out earlier, our industry's actions are but one of the three main factors in determining the future of honey in America's schools. But it may well be the most critical factor and certainly the one we can most easily control. Why not do your part to see that this broad promotional effort is maintained, strengthened and expanded on every front?□

Editor's Note

We have devoted a lot of space to Alan's series of four articles because we feel introducing school age youngsters to honey will pay big dividends in future honey sales. We hope you will support Alan in his efforts to see that this program is continued.

A Novel Inexpensive Hive for Teaching

by MICHAEL ROLING
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Introduction

Teaching new students the varied aspects of beekeeping is often a challenging and interesting experience. A major concern of mine is not only an introduction to the honey bee via textbook and classroom situations but also repeated field experiences so the classroom and the "real bee world" can be combined.

With budget constraints often proving to be a limiting factor. I have been experimenting this past year with a hive which would provide some of the following aspects: A hive small enough to initiate the more timid to feel more confident, a hive where the significance of the bee space can be experienced, a hive which is radically different to grab their attention and make the student examine the bees and their behavior more closely, a hive which is low in expense yet durable and a hive that can be constructed with a minimum of materials and tools. It is also my intention that the student could take this hive with them at the termination of the course. Again, another reason for a minimal investment. (I must stress that the hive described in this article is not intended to replace experiences with standard size bee hives.)

Hive Description

The hive devised has its origin with the Kenya hive (Sperling and Carson, 1980) and the barrel hive (Hayes, 1983). A five gallon plastic pail with the lid attached comprises the main component of the hive. A 1½" hole is drilled into the center of the lid and the pail is then cut in half from top to bottom. The 1½" hole serves as the entrance. The five gallon plastic pail was chosen since it is easily available both new and used. Attached to the length of the pail on both sides of the interior are two wooden strips (Figure 1). These act as frame rests. The wooden strips measuring 1/4" x 3/4" x 13" were attached to the pail with two nuts and bolts approximately 2" from the front

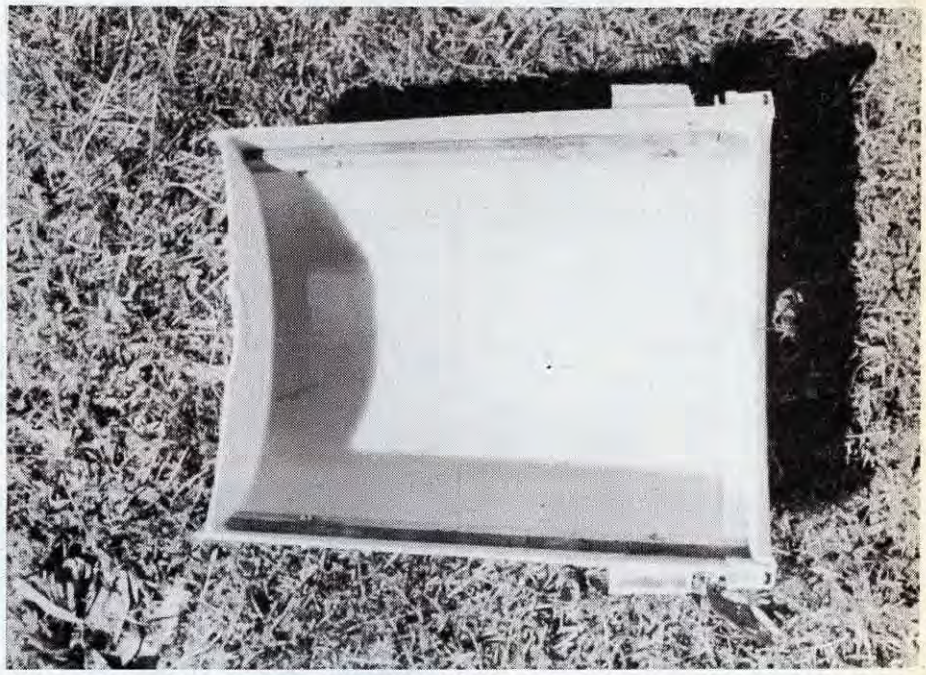

Figure 1 — Five gallon plastic pail cut in half with frame rests inserted.

Figure 2 — Five gallon plastic pail cut in half with starter strip inserted in frame and frame in position on frame rest.

and back (Figure 1 and 2). The strips are mounted approximately one inch from the opening of the cut surface. Frames are made by cutting wood strips 3/4" x 1" x 10" to 10-3/4" in 1/4" increments (Figure 3). There is a taper as you proceed from the front (lid) to the back (bottom). Nine frames are needed for each hive. On one of the inch wide surfaces on the frame a groove is cut down the center for insertion of a starter strip of beeswax foundation. The groove is the

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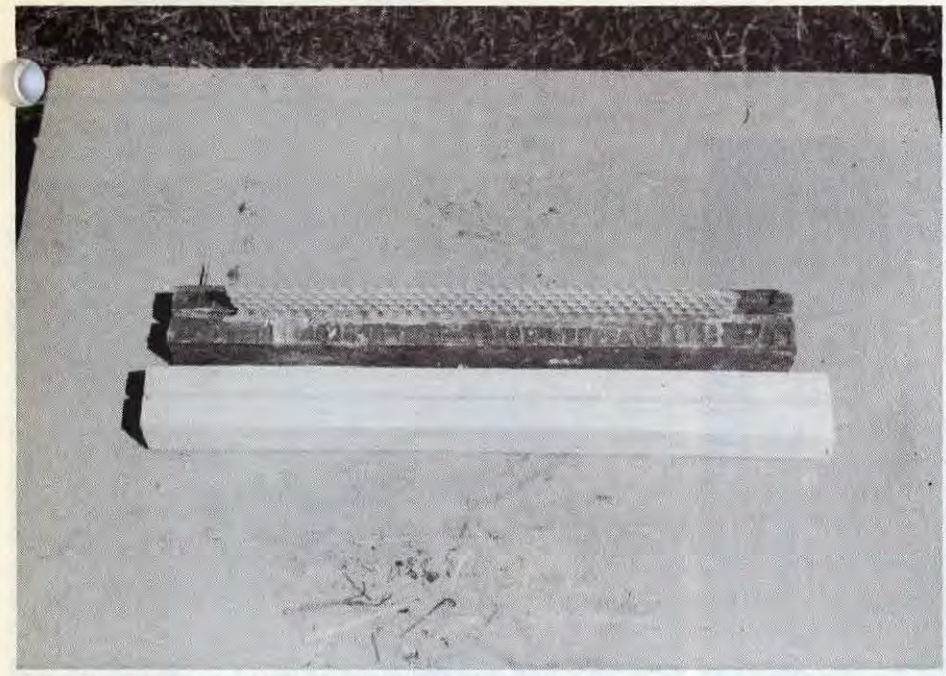

Figure 3 — Two frames representing starter strip attached and with no starter strip attached.

width of the saw blade and extends 1/4" deep. The starter strip is held in place by melting beeswax and pouring it into the groove with the starter strip inserted in the groove and allowing the wax to solidify. Eight equal sized starter strips can be made from one sheet of shallow cut comb foundation. The top of the hive is constructed of 1/4" thick hardboard 13" x 16". In order to feed the colony, a 2½" diameter hole is cut in the center of the top (Figure 4). This hole

Figure 5 — Assembled unit with feeder jar in place and the whole unit supported by concrete blocks.

fits the lid size of the jar that would become the feeder. In addition to cutting the hole in the top, it is necessary to build a small lip of waterproof material around opening for the feeder. The water tight lip around the feeder is made of G.E. Silicone bathroom caulk and sealer® . To construct the water tight lip, wax paper strips are cut to conform to the thickness of the lid and wrapped around the lid. The wrapped lid is then inserted into the opening in the top and both the top of the hive are rested on a flat surface. The sealant is then applied to conform to the lid. Once the sealant dries, approximately 24 hours, the jar with the lid is removed and the wax paper discarded. The wax paper does not stick to the water tight lip. The whole unit is mounted between two concrete blocks or bricks. (Figure 5)

Figure 4 — Water tight lip surrounding the opening for the feeder jar in the top of the hive.

Cost Estimate

The cost of the hive will depend upon current prices and the amount of salvage material you can incorporate into the hive. By salvage material I am referring to such items as used jars for the feeding device, used plastic pails, or discarded wood for frame rests and top bars. The cost incurred in this study ranged from $1.11 to $2.24.

Two tools were needed to construct the hives: a portable circular saw and a power drill. Since these are basic tools found in the household, no additional cost was added.

Manipulation Of The Hive

Bees from a two pound package were introduced into the hive as you would normally introduce package bees. Feeder jars were filled with honey and the bees were periodically examined for progress: comb construction, brood production, techniques needed to work the hive, etc.

When colonies were initially developed the entrance was placed lower on the front of the hive and no water tight lip was used. When this latter design was used it was found that

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water would accumulate in the hive and several of the first hives established were drowned. Therefore, the water tight lip on the top was added and the entrance moved up immediately under the lid of the hive (Figure 5).

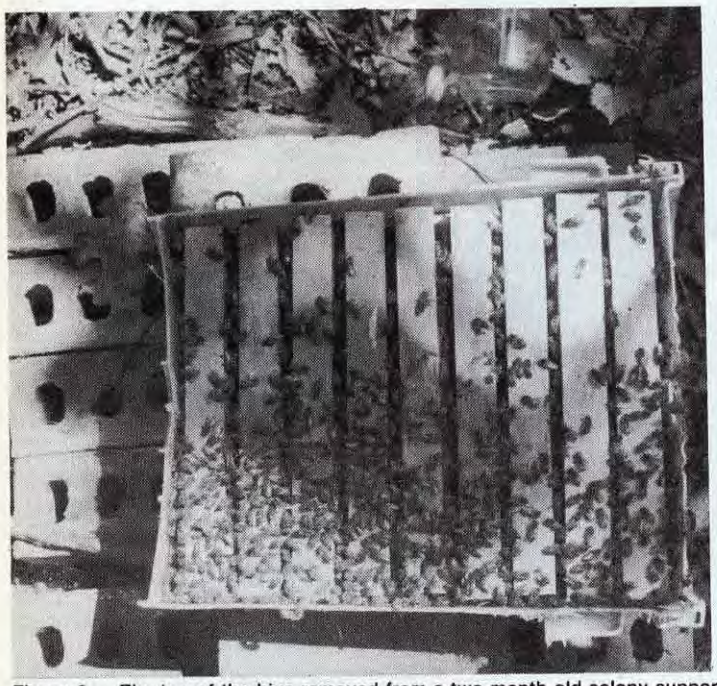

Figure 6 — The top of the hive removed from a two month old colony supported by bricks.

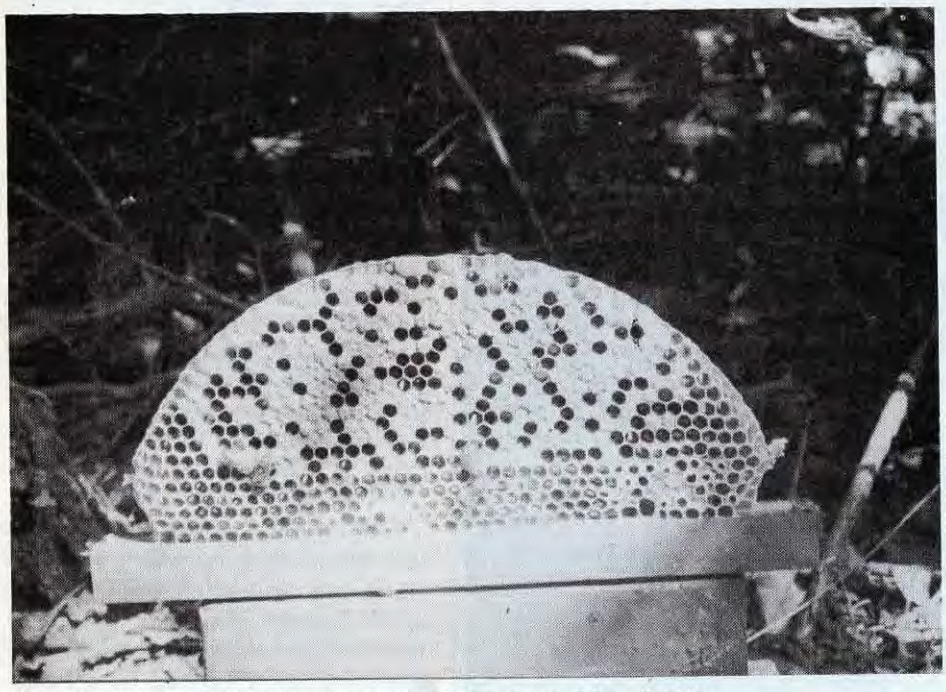

Figure 7 — Comb containing brood, pollen and honey removed from the hive.

With the lid removed, Figure 6 demonstrates the view with a full compliment of frames and a colony that is two months old. Upon examination, if frames are removed they are placed upside down and rested on the upper surface of the frame (Figure 7,8). When the combs are initially produced care must be exercised because the comb may not yet have enough rigidity to support itself in a vertical position. With sufficient rigidity, the comb may simply collapse at a right angle to the wooden top bar. Figure 8 gives a view inside of the colony with three combs removed. The frames are clearly moveable and remarkably free

Figure 8 — View of the inside of a hive with three combs removed.

of burr comb. As can be seen in figure 7, there may be a small amount of burr comb in close proximity to the frame rest, but to date that has remained minimal.

Since our beekeeping source at Southwest Missouri State University is taught in the spring and the hives are only intended for teaching purposes, they need only survive for approximately a two month period. However, my experience using these hives during the summer and early fall indicates they will last far longer than just two months if need be.

Thus, a hive is constructed that theoretically meets my needs initially stated at the beginning of the article. Hopefully, my next report will convey student reactions and the usefulness of this device.

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Bee Talk

By RICHARD TAYLOR
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A husband and wife beekeeping couple recently aroused considerable attention and discussion by winning a lawsuit against the state of Ohio with respect to its practices and methods of apiary inspection. Since the issues raised in this lawsuit are of profound interest and importance, not only to beekeepers, but to all law-abiding citizens, I thought it worthwhile to do some research into the matter. I got a copy of the court order, as well as the supplement to the **Federal Review** which bears on this and similar cases. I also corresponded with friends in Ohio who have followed the case.

The order, signed by Judge Walinski, was handed down by a federal district court, and while it is addressed only to the constitutionality of the Ohio statute, it sets forth standards which must be adhered to in any jurisdiction. It is fifteen pages in length and is an eloquent reminder of one of the most precious blessings we enjoy in our beautiful country, namely, that the State itself can be brought to the bar of justice by a private citizen, and that the two will then stand before the court as absolute equals.

We sometimes need to be reminded of certain things that are very basic to our way of life. One is that agents of government, of whatever level, are subject to the same laws as everyone else. No one exempts himself from these laws just by drawing his salary from the public treasury. Thus the laws respecting trespass, vandalism, the invasion of privacy, the destruction of private property and so on apply no less to the agents of government than to anyone else.

Another principle basic to our whole way of life is that the laws of the states and lesser jurisdictions must conform to the law upon which our whole society rests, that is, to the United States Consitution, the "supreme law of the land." Two provisions of that supreme law relevant to the present case are (1) that "the right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated," and (2) that no state may "deprive any person of life, liberty, **or property,** without due process of law." The first of these provisions entails that no one can walk into your house or place of business, unannounced and without your knowledge and permission, and start carting things off or destroying them on the spot without a warrant. If you think that provision is not precious to our way of life, just take a moment to reflect on what life would be like without it.

The second provision entails that no one take, demolish, burn or otherwise destroy our personal and private property, whether of great or little value, just on the basis of his own opinion that it would be a good idea to do so. And if you doubt the wisdom of that, again reflect upon what our way of life would be like without it. Indeed, would not the power a man had to walk into your land and buildings, unannounced, and destroy things belonging to you without your consent, things upon which you might depend for your livelihood, just on the basis of his own determination that this should be done, amount to a power to compromise or destroy every basic right you have?

The Federal District Court, in the case before us, addressed itself only to the legality, that is, the constitutionality, of the Ohio apiary inspection law. That law provided that a bee inspector "shall have access to and egress from any apiary or to any premises, building, or any other place, public or private, in which he has reason to believe that bees, honey, wax, used hives, or used appliances are kept," and further, that no person may resist or hinder him doing this. Inasmuch as the very language of that statute seems clearly in conflict with the principles noted above, especially the first, I do not see how the Court could have been guided to any other conclusion than what is set forth in its order; namely, that a beekeeper may indeed protest such an invasion of his property, in which case the agent will need to obtain a warrant. That is, after all, the way things have been done since the founding of our Republic.

The outrage that has been expressed in some quarters over this ruling, particularly from bee inspectors themselves, rests, I think, upon sheer misunderstanding. The ruling does **not** require that inspectors must get search warrants for every apiary they want to inspect. It only requires them to have the beekeeper's consent — a consent which the vast majority of beekeepers are perfectly willing to grant, once and for all. The ruling therefore raises no serious obstacle to the inspection of apiaries. And it **does** protect a beekeeper from lawless behavior on the part of an inspector who might be careless, arrogant, stupid or even vindictive. The ruling does, to be sure, subject a bee inspector to some inconvenience if he comes upon a beekeeper who distrusts him and who takes his constitutional rights seriously. But laws in our beautiful country are not made for the convenience of government, but for the protection of the people.

I therefore welcomed this ruling and rejoiced over it, as I think anyone will who reflects upon its deeper significance. I have, over the years, kept bees in four states and known many inspectors. Most of these have been intelligent, law-abiding public servants, but not all have. A few have imagined that the laws and respect for property do not apply to them, and some have been ignorant. I have gone to an apiary to find frames and combs broken and wrongly replaced in the hives, but an inspector who had not even notified me of his coming. I have found damage resulting from sheer carelessness and stupidity on the part of inspectors in apiaries which were known to be free of disease. One inspector even wrote to me to say he did not know **how** to inspect bee hives without damaging them. He proposed that I should do all the manual labor of inspection, while he merely looked at the combs held up for his examination! He was eventually fired, but not

Continued on page 33

QUEENS BY THE HUNDREDS

by LARRY GOLTZ 3020 Harlan Dr. Reading, CA 96003

A visitor to the tree-shaded ranch home of Jim and Verna Woolf at 4592 Quail Valley Drive, Redding, California 96002, has about as much chance of arriving unannounced as a furtive robber bee at the entrance of a strong colony of bees. Dutifully signaling the arrival of visitors is a pair of ever-alert Walker-Plott bear dogs who, despite their resonant, deep-toned baying, are really quite friendly. A large enclosure keeps the hounds, Scrapper and Queenie, from becoming over-friendly with visitors. At the time, however, it was reassuring to me, a comparative stranger to the pair, that they were behind a woven wire fence and I was in my pick-up camper. A lively flock of ducks added to the din created by my arrival. The 200-plus hives of bees in the rear yard were silent. Jim and Verna Woolf breed gentle bees. On this rainy October afternoon they were settling in after being brought into the home yard from various outyards further up the Valley.

The Woolfs are a close family. Jim and Verna operate a queen rearing business which sometimes draws upon the service of daughter Linda and son-in-law Lon Bonnett. Linda and Lon work their expertise at grafting the tiny larvae. Her experience goes back several years when she did the grafting for one of the large commercial bee breeders in Shasta County. "Young eyes are needed for grafting," Jim admits. Verna finds such exacting duties as record keeping her responsibility but she also shares much of the other apiary work with husband Jim. Son-in-law Lon helps with the apiary whenever time can be spared from his job as a deliveryman.

Jim Woolf retired from his job with a Pacific Coast telephone company in 1981. The queen rearing business began in a relatively modest way in 1974. The first year's sales amounted to two queens. Up until 1981, queen sales remained quite modest; building up the facilities, the acquisition of breeding stock and the accumulation of experience in queen rearing was the principal occupation during these beginning years. It was a season's experience working for a queen breeder, and attendance at a queen rearing class at the University of California, Davis, taught by Dr. Norman Gary and Dr. Harry Laidlaw which gave the Woolfs their basic training. Much of the effort of the first few years was also expended on perfecting techniques and acquiring or building the myriad types of equipment needed in this exciting and very specialized form of apiculture. "We wish to acknowledge the help received from Lois and Homer Parks during these beginning years," says Jim.

A warehouse was built in 1978, with an expansion of the business in mind. The Woolf home is situated on some twenty acres of land, most of which is wooded with manzanita, oak and pine, good screen to separate the sixteen bee locations, sometimes occupied by full colonies, but mostly by the mating nucs.

Starting a queen rearing business in Shasta County, California is analogous to drilling another oil well in Texas; it was not a pioneer experience as Shasta County produces more queens than any similar area in the world. Most queen breeders in Shasta County are comparatively long-established and produce queens and package bees on a scale sufficient to supply the requirements of the largest honey producers in parts of the United States and Canada.

The Woolf's queen rearing business is a family-oriented operation; sales in 1985 amounted to less than a thousand queens. "We feel that this size of an operation provides the opportunity to give personal attention to a hobbyist's needs, yet produces quality queens using proven methods. It enables us to give maximum attention to the smaller orders," Jim says. Most queen sales have been to West Coast customers, but shipments to such states as Minnesota and Wisconsin are made regularly, as well as to the eastern seaboard states. "We ship Mondays, Tuesdays and Wednesdays during the shipping season so that no queens are likely to lay in the Post Office over the weekend," Jim says. "We ship on Fridays to some distant points where weekend

Jim and Verna Woolf work as a team in the apiary.

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delivery is unlikely," he adds. In quantities of one to six queens, the individual cages of queens are enclosed in paper mailing envelopes. In larger quantities, the individual cages are secured within light crates made of wood and wire. Jim is of the opinion that this type of enclosure for the queens has the advantage of additional protection and lends neatness to the shipping package. This extra packing is a justifiable extra in his experience, though commercial beekeepers, handling perhaps several thousand queens during a short period in the spring may have reason to accept, or even prefer to have less binding packaging.

Two story colonies are used as cell starter and cell building colonies.

Mating nucs are divided, one-story hives. Entrances (one for each of the two divisions) are at opposite ends of the hive.

All queens from the Woolf apiary are clipped and marked unless specifically asked not to do so on the order. Both services are included in the sale price of the queen. A limited number of overwintered queens are usually available for delivery in early March but orders for those early queens must be received during the previous fall when the early spring inventory of queens can be estimated. There is always some guesswork as to the number of queens that will be available early in the spring. The bulk of the queens are produced in April, May and June. Queens are also available in the summer and fall, usually at reduced prices. Overwintering queens, even in the comparatively short and moderate winters of the upper Sacramento Valley, presents some risks to the breeder who attempts to do so. In the three to four, or more, months of unsettled weather, usually from November to March, the lack of forage, varying temperatures and other stressful conditions tend to cause queens to be lost in the wintering nucs. Queen survival is often less than satisfactory for breeders who attempt to preserve queens for very early spring sales.

Immediately upon their return of their bees from almond pollination the Woolf's begin their queen rearing.

Breeder colonies are in ten frame, deep comb, one story hives. Two center combs are separated by vertical queen excluders, between which the breeder queen is confined. Two dark combs are selected as the center combs as this allows the tiny larvae to be more easily seen. On the fourth day after eggs are laid, 12 to 18 hour old larvae are grafted from these combs into prepared cell cups, 15 cells to a bar and three bars of cells mounted in a specially constructed frame. The racks of grafted cells are immediately taken from the warm grafting room to the cell starter colonies, where they remain for 44 hours. During this period of time, the larvae are fed often and regularly with royal jelly by the nurse bees. The cells are extended in length around the larvae accepted by the cell starter colonies. A good colony population is needed in the cell starting colonies, assured by continuously adding bees and combs of mostly capped brood. If queen cells are started from any larve which may be among the added combs, they are destroyed without exception during the frequent inspections. Feeding these units is a continuing process during the queen rearing season.

The starter colonies begin the season as single story units, but as the population increases, a second story is added. The starters are queenless and will remain so during the time they are used as cell developers. A queen excluder may be used to prevent entry of stray queens, which would endanger the frames of developing queens cells.

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Jim Woolf (left) and son-in-law Lon Bonnett looking for a queen.

Lon Bonnett grafting larvae.

Daughter Linda working in the grafting room of the Woolf apiary.

The cells are removed from the starter colonies and placed in the cell builder colonies. These are queen-right, two story colonies with the queen confined to the lower body by a queen excluder. A frame of grafted cells from a starter colony is placed in the upper hive body, a notation having been made of the day on which each frame of cells is grafted. The cells are capped in five days. On the sixth day, another frame of grafted cells from a starter colony may be added. At the ninth day, the capped cells are taken from the cell builder colony and placed in an incubator, which is kept at 91 degrees F., and at a humidity of 78%.

After two days, or, on the eleventh day, counting from the day of the graft, the frames of cells are taken from the incubator and cut from the bars. A thin-bladed knife is used which is heated by dipping the blade in hot water. This is a critical time in the development of the queen pupae, so any rough handling must be avoided. The individual cells are examined as they are cut and are placed in a warmed, clothlined box until from 70 to 80 cells are accumulated.

The individual cells are then transported in the insulated box to the mating nucs which have been prepared in the 16 apiaries distributed about the home area. The mating nucs are deep, single story hive bodies which are divided in two holding five frames each. The bees making up the populations of the mating nucs will have been queenless for at least 24 hours. This is to assure that the cell placed with these bees will likely be accepted. The queen cell is inserted on one of the inside frames during cool weather; perhaps on one of the outer frames during warm weather. At least 16 days pass before the emerged queen is caged for mailing. If the weather allows immediate mating of the queen, she will usually be laying eggs within 13 to 14 days and by 16 days the pattern of brood is observable. In the northern California area, mating is generally within five or six days of emergence. Only queens with satisfactory laying qualities are caged for mailing.

Newly laying queens will generally maintain the strength of mating nucs of the five frame size throughout the

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QUEENS BY THE HUNDREDS

queen rearing season, allowing full use of the nuc for a succession of mated queens available for caging and shipment to beekeepers.

The Woolf's ship queens by mail and generally reach their desination in less than three days. To insure immediate delivery to the customer, the beekeeper's phone number will be placed on the shipping label if it is given to the shipper.

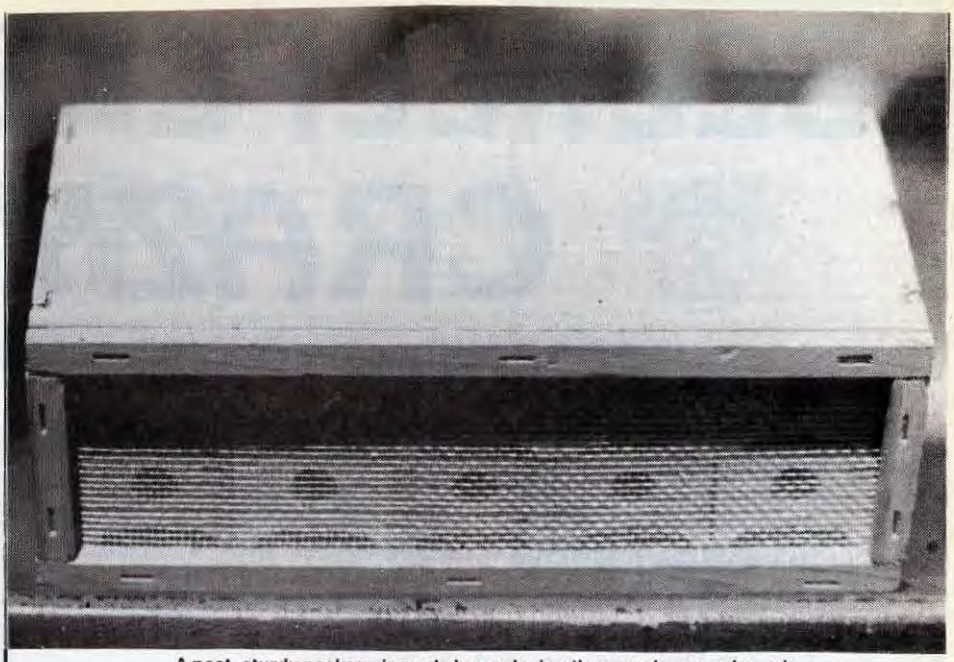
Colonies with selected drone combs are placed around mating yards to insure an adequate population of male bees to mate with the emergent queens.

Looking at the Woolf's queen rearing business, one is not so much impressed by the volume of output as by the evidence of personal attention given to the rearing of their queens.

The production of queens in large numbers by the breeders in both California and the Southern States is a resource indispensible to the commercial honey producers of the North and the West; in both the United States and Canada. This service is irreplacable. Production is usually efficient and their methods result in the highest quality queens demanded by the commercial beekeeper. Queen rearing is a highly specialized part of the bee industry, but just as there is a place of importance for the hobbyist and producers of limited amounts of honey, so also is there a place for queen breeders with limited output.

My interview with the Woolf's completed, I circled the oval drive leading the road. I was escorted by the excited hounds. Watching them from the window of my truck, my thoughts returned to our discussion of bear hunting. Seeing the two powerful looking hounds running along the fence of their enclosure was sufficient to impress upon me the extent of their capability of treeing an adult bear many times their size and strength.

Shasta, Siskiyou and Trinity Counties in northern California have comparatively high populations of black bears. The Woolf's were preparing for their first bear hunt of the season, the last of the hives of bees having just been brought in from the outyards. Hunts begin at dawn, the dogs being led on leashes along a trail or driven along very slowly tied in the back of a four wheel drive truck. Hunters and dogs cover miles of back country looking for a sign of bears. Should a fresh scent be picked up by the dogs, they are unleashed and the often long chase begins.



A neat, sturdy package is made by enclosing the caged queens in a wire-wood shipping cage.

Jim and Verna Woolf with their dogs Scrapper and Queenie.

"When a bear is treed, the fun ends and the work begins," explained Jim. Most likely the bear will be brought to bay in the roughest terrain and in the most dense brush cover." If the bear is treed, the dogs are chained away from the place the bear will likely be brought down from the tree; a bear coming down out of a tree wounded would be a dangerous antagonist for both dogs and men. They have been known to form into a ball and roll down an incline for some distance after being shot. Some mature bears taken by the hunting parties of which the Woolf's were a part have weighed over 400 pounds.

Continued on page 33

BEEKEEPERS ARE CRAZY!

by GEORGE DURHAM 1724 Skyline Drive Bartlesville, OK 74003

Beekeepers are crazy. That won't stand as one of the more profound statements of all time, because everybody is nuts to some degree. It's just that beekeepers keep trying to prove it more than others — with the possible exception, for instance, of skydivers, scuba divers and human cannonballs, to name a few.

Too many fallacies are accepted as proven fact. For an example, one beekeeper might ask for a suggestion on how to keep a smoker from going out. Now, has there ever lived a beekeeper who hasn't put a cramp in his thumb trying to control a hot hive with a dead smoker? Of course not.

It's simple to keep a smoker from going out. If there's no safe place to dump it after you're through using it for the day, put it in the back of your van. That sucker will be smoldering when the sun comes up the next day. Or, put it in the back of your pickup and let three dozen drivers honk their horns and and yell that your truck's on fire.

Has any beekeeper not struck those periods when he can't find a queen to save his soul? Making it even more frustrating is the awareness of how much different a queen looks than workers and drones, particularly after you have finally spotted her.

To find her in the first place, though, has given many a beekeeper spots before his eyes at one time or another. Want to know the surest and quickest way in the world to find a queen, especially one who has just laid five or six frames of beautiful, unbroken brood patterns? Just let the end of a heavy frame slip out of your fingers onto the frame rest. You'll accomplish two things every time. For one, you'll enrage the whole darned hive, and secondly, when you lift that dropped frame, you can easily find the queen squashed flat beneath it.

Ever misplace your hive tool halfway through your rounds of 50 hives or so on a blistering day, with the wind coming up and thunderheads starting to build and every hive getting a little more antsy?

It has to be in only one place; it's wedged between the frames in the lower chamber of the last hive you checked. It's the hive, by the way, which sounded like a 707 taking off when you finally slapped on the outer cover.

How much upper ventilation should a hive have to enable the bees to keep their family room comfortable? That's no problem. Keep slipping a little bit thicker wedge between the top super and the inner cover. You'll know the ventilating gap was the right width when you forget to remove the wedges when you put on the bee escape, and come back to find every last ounce of honey robbed.

No beekeeper worth stinging hasn't had his veil come untied at one time or another. Be it a bow knot, clove hitch, double half-hitch, you name it, sometime or another that knot will fail. There's one infallible way to make sure a veil is fastened so securely nothing could undo the knot. All you have to do is find a bee inside it, right between your crossed eyes, and that knot will defy any human's most valiant attempt to shuck that veil.

Some people are uncertain about identifying poison ivy in their beeyards. What's hard about that? Simply grab some weeds to brush away the last few bees from a frame. Then look at what you've used. That's what poison ivy looks like.

It's been said we all complain about the weather, but nobody does anything about it. It's not because we can't, and it's so easy, too. If you need a long, protracted wet spell, all you have to do is feed some thick, expensive syrup to your over-wintered hives and incite those impatient queens to spew out eggs like a berserk slot machine. Get that colony built up strong — really strong. You'll get your long, protracted wet spell, partner. You can make book on that.

So are we crazy because we're beekeepers? Or are we beekeepers because we're crazy? All we know for sure is it would drive us nuts not to be one.□

BEE TALES

by N. EUGENE SHOEMAKER 111 Winterstown Rd. Red Lion, PA 17356

The Pennsylvania Beekeeper hobbyiest in January and February just dreams of playing with live bees. He tries to satisfy his apiculture yen by reading a bee journal, attending beekeeper meetings, assembling new equipment and putting used equipment in shape for the coming season. I do go to the bee yard on occasion and check the entrances of the hives to see that they are not clogged shut and may check to see that all hives have sufficient stores, especially those that went into winter in a questionable condition.

My bee yard is quite handy since it is about 40 feet from the back of our residence. On the back of our house is an enclsoed sundeck and in back of that an open sundeck with a cement floor.

On the last day of February my wife called my attention to a bee lying on the concrete sundeck. It was early morning and the temperature had been at 20 degrees during the night and indeed the ground was covered with snow. My wife said "one of your little girl friends came to see you and since you didn't let her in she froze to death". I was curious, of course, so I opened the door, picked up the bee carefully and brought her in. I put the bee under a magnifying glass and discovered her wings were not frayed and that she seemed to be in good state of repair except she was apparently frozen and not functioning. Indeed I took her to be dead. An interim of about 10 minutes elapsed and I was about to forget the incident when I saw a slight movement of her body and then all of a sudden her abdomen began the accordian movement that is characteristic of breathing in adult insects. Soon the bee started to walk, wobbly at first and then very naturally. Next she flew to the window. I caught her by the wing and released her outside watching as she flew back to the apiary. A close examination of the concrete sundeck revealed five more bees that appeared to be frozen lying on the floor. I gathered them and carried them into the house. One by one they all revived and flew back to the apiary.□

Quite a few years ago when we lived in another location there was an unusually warm day in early January. As I went about some outside chores I decided to take a walk to my bee yard. To my surprise the bees were not only flying like they would on a summer day but carrying several kinds of pollen. What kind of flowers would be blooming in January? The earth was covered with melting snow. My first idea was that some one had a green house with the windows open on this very warm day. I soon dismissed this from my mind for I knew all our neighbors in that rural community for many miles around. It was baffling until I got the idea to follow the flight of the bees and then they would show me the source of the pollen. Their flight was easy to follow for it went in a straight line over the hill. Not halfway to our destination I felt sure I knew the answers. The bees were heading straight to the Presbyterian Church and grave yard about a mile away, and sure enoguh they were many of them crawling over the fresh cut flowers on the grave of a gentlemen who was buried the day before.□

Winner of the American Beekeeping Federation's 1985 4-H Essay Contest:

The Key To The Future Of The American Honey Industry

by MATTHEW WINSTON BEASLEY — Age 13 306 Bolton Street Glennville, Georgia 30427

In recent years, the American Beekeeping Industry has encountered many challenges. Among these are a decreasing production and export rate and fewer sources of nectar and pollen. (Patty, 1980) Like farming, beekeeping is at a crossroads. Decisions made in the next few years may greatly determine the entire future of the beekeeping industry in the United States.

It is strange that farming, which is so closely related to beekeeping in many ways, should also be one of the bee industry's major problems. In the farmer's efforts to increase food production, he has become one of the chief enemies of the honeybee. The use of pesticides has meant death to millions of honeybees that are valuable to the farmer's crop yield. Certainly the farmer did not intend to destroy the honeybee, but the problem with pesticides is that they cannot tell which insects are "good" or "bad". This is one of the problems of modernization. The gains from the use of pesticides have been at a terrible price for the honeybee. Such pesticides as parathion have proved devastating to thousands of bee colonies. (Wilson, Sonnet, and Stoner, 1980).

Right along with the pesticide problem is the problem of herbicides. The herbicides kill weeds that are pollen producers. The only plants that are left are the ones that are under cultivation, which in turn, are sprayed with pesticides. The shift of farmers from vast crops of alfalfa and clover to corn, for example, has had a dramatic effect on the bee industry. Corn has no nectar, but most bees are killed while collecting pollen from insecticide-treated corn. (Wilson, Sonnet, and Stoner, 1980)

Even though the honeybee provides pollination for vast numbers of crops, beekeepers do not receive production for this service. This means that beekeepers must depend on honey production for its main source of income, but American honey output has declined in recent years, while imports have been increasing. Export of honey has also declined. (Patty, 1980).

There are other problems that the beekeeping industry faces, but I believe these are the key to the future of apiculture. The facts appear negative; however, I am optimistic.

In the last few years, there has been a concern for physical fitness that has almost become an epidemic. this is no fad. Fear of cancer, heart disease, aging, etc. have led to the development of spas, health food centers, exercising and many other ways of seeking fitness.

What does the beekeepng industry have to do with this health movement? First of all, this movement will lead science to look for newer, safer ways to controls weeds and insects. We have already seen what happened in Viet Nam with the use of what was thought to be a harmless herbicide — Agent Orange. Americans are becoming more suspicious of chemicals in their processed foods. This awareness will come to include, to a greater degree, the use of chemicals placed in the soil and on the plants. By the turn of the century, I believe we will see a drastic change in the ways our food is grown. Already there is a growing movement for organic gardening. Science will find a way to make natural methods available for large-scale production. We learn our lessons the hard way, but we learn them.

Another way the beekeeping industry can profit from the health movement is to take advantage of the physical fitness aspect of this movement. As had been stated, Americans are becoming aware of the fact that "We are what we eat". Artificial sweeteners are linked with cancer. More and more naturalists are turning from such sweeteners, but they do not refined sugar because is also has been linked with cancer. That leaves honey as the only "safe" sweetener. By the turn of the century, I believe we will see a tremendous increase in the use of honey as a natural sweetener.

The leaders of the honey marketing business now have a golden opportunity to mold the future of their business. The key is to develop a public relations campaign that will revolutionize the honey market. In the past, more people considered honey as a produt that could only be used in ways that syrup is used. The public must become aware of the new and better uses for honey, and it is the job of the honey producers to see that the public becomes aware. Advertising is the way to see that this is done. The industry must mount a massive advertising campaign that will bring the benefits of honey to the attention of the public. It is the nature of Americans to react to Madison Avenue. The right public relations

Continued on page 37

BEE TALK/**Continued from page 25**

until after a great deal of damage. I have had a been inspector hang up the phone in my ear when I called to protest particularly severe damage to my hives. He simply assumed that laws do not apply to him. Lawlessness such as this, especially when positively encouraged by higher officials, as I have seen done, undermines the very principles upon which our society rests, and we ca be thankful indeed for our judicial system and its wise and able representatives.

You, as a beekeeper, have certain basic rights with respect to the inspection of your apiaries. You are entitled to know approximately when the bee inspector plans to inspect them, so that you can be present if you wish. You are entitled to the careful handling of you valuable equipment, and to the repair of things broken by carelessness. You are entitled to protest his presence on your property or in your buildings if you suspect vindictiveness or any other improper motive. And you are entitled to challenge his judgement if he declares that hives or other private property of yours should be destroyed without compensation to you.

All of these things, one would suppose, should go without saying. But alas, there will always be people who, operating under the mantle of government, imagine that such principles do not apply to them. That is one reason why we have a judicial system to apply the laws and to guard the protections we enjoy under them.

Editor's Note: *As you can tell Dr. Taylor has had some bad experiences with local bee inspectors. Our experience with very few exceptions is that over the country apiary inspection is well received by beekeepers and has been effective in lowering the incidence ot disease. As with any law enforcement, the people who do it must be skilled in dealing with the public. The art of persuasion and respect of the individual is very important in order to have a successful inspection program.*

We are told the state is appealing this decision.

Continued from previous page

QUEENS BY THE HUNDREDS

Fortunately, many northern California bee yards are located away from the areas of high bear population. As a result, there may not be as many reports of bee yards being raided by bees as would be the case in other areas where bears inhabit the honey producing regions, such as in Canada. Colonies destroyed by bears are a startling sight, as I have witnessed in British Columbia and Alberta, in Canada. Bear hunting helps to control the population of bears, although, unfortunately for some beekeepers, it is an inadequate control where bears are a distinct and continuing nuisance to honey producers in vulnerable locations.□

Seven Steps To More Sales From Your Classified Ads

by BERNARD LYONS

"Classified advertising is a powerful sales tool," according to Bernard Lyons, editor of KEY, a newsletter on mail advertising. "And it's probably the most cost-effective way to generate inquiries."

Whether you have never placed an ad before, or whether you have been using classified advertising for years, you can generate more sales by following these seven simple steps:

1) Follow the AIDA principle. Classified advertising must follow the rules of all good advertising. The AIDA principle is one way to sum it up: **A**ttention, draw **I**nterest, create **D**esire and cause **A**ction.

2) Put "U" Before "I". It doesn't work that way in the alphabet, of course, but in advertising "you" becomes before "I". It's another way of saying that when you are selling put the emphasis on the reader. Your ad should tell the reader what your service or product will do for the reader!

3) Be aware of the classified ad's limitations. You can sell directly from a classified ad only if you ask for a small sum for a catalog, sample or modest product. Leave your full sales message for display ads and direct mail; the classified's job is to entice prospects to write or call for more information.

4) Use power-packed sales words. There are certain words and phrases that are generally successful in all advertisements. The favorite six are FREE, NEW, AMAZING, HOW TO, NOW and EASY.

5) Do not worry about the word count. Your first job is to get all the benefits and selling words about your product or service on paper. Then comes the rougher job of editing and polishing!

6) Say more in fewer words. The average classified is 20 to 25 words. Generally, if you can't state your proposition in 35 words or less, go back and analyze your offer.

Find brief ways to say the same thing: Use "10¢" rather than "10 cents"; write "Satisfaction guaranteed" instead of "Money back if not satisfied"; say "Details free" or "Free Information" rather than "Write for free details".

7) Key your ad. A "key" is a device to code an ad so that you can tell where an inquiry or purchase came from. It should always be used when you advertise in more than one publication.

There are many ways to key, including asking the prospect to write for "Free Booklet 3-N" in one magazine and "Free Booklet 3-A" in another publication. You can also change initials in your name or add a letter to your box or street number.

A complete plan (8½ x 11, 12 pages) for making big money from small ads, "Cash From Classifieds", is available to readers by writing to Voice Publications, 1016 S. Fly Ave., Goreville, IL 62939-9720.

Testing Your Beekeeping Knowledge

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

The social structure of the honey bee colony is very complex, since it is regulated by several pheromones produced by the queen and worker caste. These pheromones are concerned with the coordination of individuals within the population. Each member of the colony has a definite task to perform and it takes the combined efforts of the entire colony to survive and reproduce. Individual queens, workers and drones cannot survive by themselves. Since the worker caste cares for the young of the reproductive caste and there is a division of labor within the worker population, colony members vary morphologically and physiologically in relation to caste and specific duties.

Please answer the following questions to find out how well you understand honey bee anatomy and physiology. The first five questions are true and false. Place a T in front of the statement if entirely true and an F if any part of the statement is incorrect. (Each questions is worth 1 point).

1.____ Queen, worker and drone honey bees all have the same number of antennal segments.

2.____ The front and hind wings on each side of the bee are coupled together during flight.

3.____ Ocelli or simple eyes are capable of forming images.

4.____ Mandibular glands in both queens and workers produce queen substance (9-oxodec-2-enoic acid & 9-hydroxydec-2-enoic acid).

5.____ The crop of honey stomach is located in the abdomen.

Multiple Choice Questions (1 point each)

6.____ The honey bee has _____ pairs of breathing pores or spiracles that are used in the exchange of oxygen and carbon dioxide with the environment.

A) 6 B) 12 C) 10
D) 4 E) 8

7.____ The tibial spine on the middle leg is used to:

A) comb pollen from the thorax

B) remove propolis from the pollen baskets

C) remove wax scales from the wax pockets on the ventral surface of the abdomen

D) loosen the pellets of pollen from the pollen baskets

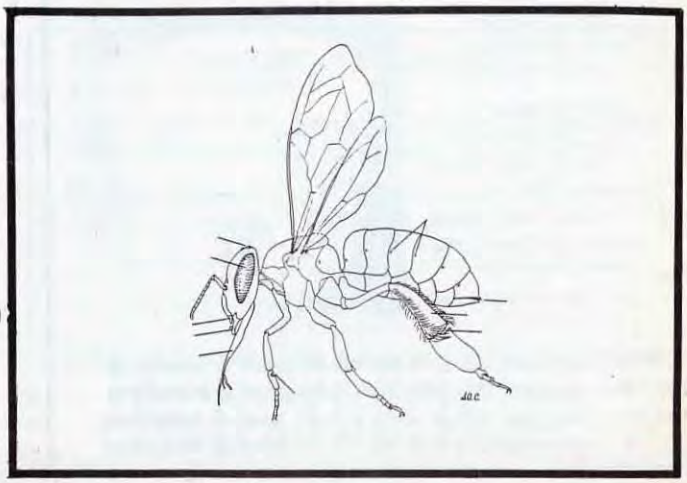
E) comb pollen from the thorax

8. Name three functions for the worker's mandibles. (3 points)

9. Listed below are several structures found externally on the exoskeleton of the worker honey bee. Please label the diagram shown below with the correct structures. (Question is worth 10 points)

A) simple eye of ocellus
B) sting
C) pollen rake
D) mandible
E) upper lip or labrum
F) compound eye
G) proboscis or tongue
H) antenna cleaner
I) pollen basket
J) spiracles

ANSWERS ON PAGE 39



International Insemination Symposium In Honor of Dr. Otto Mackenson

The Apimondia symposium SCIENTIFIC AND COMMERCIAL INSEMINATION OF QUEENS will be held in Toulouse France May 12-14th, 1986. Insemination equipment from all over the world will be displayed and demonstrated during the symposium. Participants wishing to present papers, posters, technical displays or demonstrations should send an English abstract of no more than one page to be received before April 1st, 1986. Symposium sponsors are ANERCEA (French National Queen Rearing Association), L'Institute de L'Abeille and the ITAPI.

For further details write:

L'Institute de L'Abeille
Museum d'Histoire Naturelle de Toulouse
35 Allees J. Guesde
31000 Toulouse France

North Carolina Beekeeping Calendar Available Again

Since 1980, the N.C. State Beekeepers Association has been producing an annual beekeeping calendar and this year is no exception. The 1986 calendar is back from the printer and a limited number of copies are available to non-members of the NCSBA.

The N.C. Beekeeping Calendar serves two purposes. First and foremost it is a very attractive and professional wall calendar measuring 11" x 17" when opened. The calendar pages have ample room for writing notes, recording appointments and other day to day activities which need recording. But in addition, it serves the special needs of the beekeeper and anyone interested in bees. Each page of the calendar contains a wealth of information of special interest to beekeepers throughout the U.S. with special emphasis on the mideastern states around North Carolina.

Information on the blooming dates of nectar and pollen sources, recipes for cooking with honey, and information on selected topics such as Varroa mite, using bees as food, and Francois Huber are all found in the calendar. In addition it also contains the meeting dates for many of the national and regional beekeeping organizations as well as selected state bee associations.

Non-members of NCSBA who are intersted in obtaining one of the 1986 Beekeeping Calendars may purchase a calendar through one of the following methods:

1. Direct Calendar Purchase — Individual copies of the calendar sell for $3.00 per copy with the price dropping to $2.00 per copy for orders of 10 or more calendars (mailed to the same address). Checks should be made payable to the NCSBA and mailed to the N.C. State Beekeepers Association, 1403 Varsity Drive, Raleigh, NC 27606. The purchase price includes shipping and handling charges.

2. Calendar Purchase Through NCSBA Membership — Individuals who submit 1986 new NCSBA annual dues of $8.00 will receive a free 1986 beekeeping calendar **plus** a free 1987 calendar when they are published. NCSBA dues also include additional benefits such as a quarterly beekeeping newsletter, and other NCSBA publications. Checks should be made payable to the NCSBA and mailed to: N.C. State Beekeepers Association, 1403 Varsity Drive, Raleigh, N.C. 27606.

Dr. James Tew Ohio Extension Specialist

Director of the Ohio Cooperative Extension Service J.M. Sprott announced Dec. 2, 1985 that Dr. James Tew has been appointed Beekeeping Extension Specialist. Elsewhere in this issue is an announcement of the dedication of the new bee lab at the Agricultural Technical Institute. In way of explanation, Dr. Dan Garrison, Director of ATI has announced that Dr. Tew will also continue to head the beekeeping program there. How can one man do two jobs? It definitely takes an unusual person and Dr. Tew qualifies.

Ever since Dr. Tew joined ATI in 1978 he has done a lot of extension work in Ohio, the U.S. and abroad. Now he has the official title.

Dr. William Lyon has served in the part-time capacity of beekeeping extension specialist since Dr. M.T. Sanford left the full time position to take the same job in Florida.□

Continued from page 32

4-H Essay Contest Winner

campaign could revolutionize the entire honey industry. One prime example of how new ideas and the right publicity can affect the use of honey has been the recent popularity of honey as a dip for chicken nuggets, as has been very popular with the McDonald's enterprise. With the right advertising, there is no limit to the creative ways honey can be constantly used in the home.

As with the rest of the world, computers in the beekeeping industry can become a valuable means for improving productivity. Not only can the computer store information concerning business transactions, but it can be put to work to predict future needs based on current and projected trends. Again computers and Madison Avenue go hand in hand. Computers can be used to study Mexico, which is the leading honey exporter (Patty, 1980), and the other leading exports to find out what American beekeeping can do to improve their own export trade.

It is going to be up to the beekeeping industry itself to implement plans that will renew the industry. It can be done, but it is going to take a vast amount of change in the marketplace aspect of beekeeping. With such change, the future for American beekeeping looks bright.□

*** * The End * ***

Bibliography

Patty, Gordon E. "World Production and Trade in Honey". *Beekeeping in the United States.* 1980. Page 187.

Wilson, William T., Sonnet, Phillip E., and Stoner, Adair. "Pesticides and Honeybee Mortality". *Beekeeping in the United States.* 1980. Page 129.

ANSWERS TO "TESTING YOUR BEEKEEPING KNOWLEDGE"

1. **False** The antennae of the worker and queen (females) are composed of 12 segments and the antennae of the drone 13.

2. **True** The two wings on each side of the bee work together during flight. A series of upturned hooks on the front margin of the forewing (wing hooks or humuli) fit into the fold of the forewing to form an efficient wing-coupling mechanism.

3. **False** The compound eye is capable of forming images. Ocelli or simple eyes are capable of only monitoring changes in light intensity falling upon the lens.

4. **False** Queen substance is not produced in the mandibular glands of the worker honey bee. In worker's, this secretion is believed to aid in the preparation of wax for building comb, is the principal fatty component of larval food and also contains a scent which seems to be an alerting pheromone.

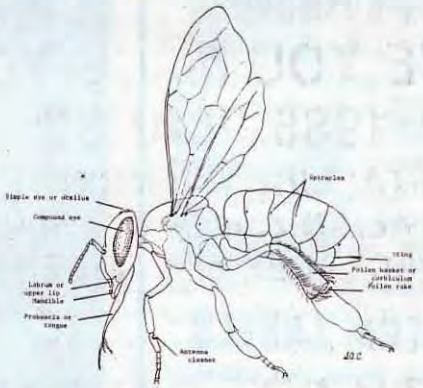
5. **True** The the anterior part of the abdomen, the oesophagus or food tube expands into the crop of honey stomach. This structure is a transparent bag which, when full of nectar, honey or water, occupies a large part of the anterior end of the abdomen.

6. **C,** 10 pairs of spiracles or breathing pores.

7. **D,** loosen the pellets of pollen from the pollen baskets.

8. Collecting and eating pollen
   Manipulating wax and building comb
   Cleaning the hive, picking up debris
   Fighting enemies of the hive
   Gathering and working propolis
   To support the proboscis

9. **See the diagram that follows.**



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

NEWS and EVENTS

U.S. Artists Win Gold & Silver Medals

Louis Dubay of San Francisco was awarded the gold medal for his 13 drawings for the 1986 California State Beekeepers Ladies Auxilliary calendar at the XXXth International Congress of Apiculture. Christian Noeller of Florida, who carried his beautiful stained glass work of a honey bee in a wooden crate to Nagoya, received the silver medal.

Christian Noeller, left, U.S.A. winner of silver medal, and Louis Dubay, right, winner of Gold medal for Bee Art at the XXXth International Congress of Apiculture.

Beemasters Course in B.C.

The 1986 Beemaster Course is set for February 17-21 for Simon Fraser University. This week long intensive course combines illustrated lectures, laboratory periods, field trips, social events and a final examination on Saturday. The registration fee is $125.00.

The main special lectures are Dr. M. Burgett, Oregon State University; Dr. Cam Jay, University of Manitoba; and Don Dixon, Manitoba Dept. of Agriculture. Local speakers include Dr. Winston, Simon Fraser University; Randy Barker, D. McCutcheon, Abbotsford, John Gates, Vernon.

Some basic core subjects to be covered are:

— Spring, Summer and Fall Management
— Hiving and Managing Package Bees
— Comb Honey Production
— Bee Brood Diseases — Indentification, Prevention and Control
— Adult Bee Diseases
— Exotic Mites; Africanized Bees
— Queen Rearing
— Pollination
— Bee Poisoning
— Bee Behaviour
— Removing and Extracting Honey
— Collection and Storage of Pollen
Hive Products

The invited guest lectures will bring with them their specialized knowledge and interests in addition to the above.

The complete program will be prepared in November. Those interested in further information at that time should contact the Apiculture Office, 32916 Marshall Rd., Abbotsford B.C., Canada V25 1K2

Wintering Bees In British Columbia?

The presence of Acarine, the near presence of Africanized bees and the future presence of Varroa is changing North American beekeeping. Most beekeepers are aware that a future U.S.-Canada border closure would prevent the importation of U.S. bees into Canada. This would cause a serious problem to package bee users, since many are not prepared for overwintering in extremely cold climates. Therefore, many people are considering British Columbia as overwintering grounds for their bees.

Approximately 3,000 hives from the prairies are overwintered in Southern B.C. Southern B.C. operators are small compared to the prairie operators, running a maximum of 7-800 hives each. The Southern B.C. barely make a living since the average yield is no more than 75-80 lbs per hive per year. The small pasture land that was once available is now limited due to the expansion of towns and villages, and the beekeepers there have relied on pollination to make a living. Unfortunately, that market has reached the saturation point.

British Columbia commercial beekeepers are extremely disturbed of the possibility of thousands of additional hives flooding the small areas for overwintering, bringing intense competition for good sites, pollen sources and pollination.

At present I am working with the Ministry of the Attorney General in drafting the rules or regulations for these hives coming into the area.

I envision fairly simple requirements such as:

Continued on next page

Continued from previous page
NEWS & EVENTS

1. Location must be approved before bees are brought in.

2. Before moving into B.C. the move would have to be approved by my office. Approval would be granted based on a suitable past record of inspection. If past inspection record is not suitable, a recent inspection in which no American foulbrood is found would be satisfactory. If American foulbrood is found on inspection, clean up must take place before approval granted.

3. Maximum number of hives at any one location may be instigated.

4. Locations will be temporary seasonal — Oct. 1 to May 1 and must be re-approved each year.

5. Hives quarantined to approved site until returned to home province. Registration and inspection fees may be initiated, as well as recourse if rules are not followed.

As the season advances, there will be more definite information forwarded to your Provincial Apiculture office and Beekeepers Association.

I think we can accomdate most interested parties. If making plans to overwinter in B.C. I ask that you contact myself or John Gates for the latest information.

D.M. McCutcheon
(604) 859-8919
32916 Marshall Rd.
Abbottsford, B.C.
V25 1K2

OR

John Gates
(604) 545-1387
4607 23rd Street
Vernon, B.C.
V1T 4K7

KANSAS

Mr. Vernon Adee of Haddam, Kansas, was honored by the Kansas Honey Producers Association for his many years of dedicated service to the Association and industry.

Vernon began beekeeping in 1935 and by 1919 he was a commercial beekeeper. With the help of three sons and two brothers they were operating 3300 hives.

He has since sold most of his colonies to a grandson but still has a hand in the business and operates about 700 hives.

He was honored at the fall meeting of the Honey Producers held in Concordia, Kansas on October 18 & 19th.

Mr. Vernon Adee

PARKHILL WINS MEDAL

Joe N. Parkhill of Arkansas, well known for his books on honey recipes, and his promotion of hive products for good health, was awarded a medal at the 30th International Apicultural Congress which took place in Nagoya, Japan in mid October.

Philip A. Pike

Philip A. Pike, 96, of 447 Lake Ave., died yesterday in Worcester Memorial Hospital.

He wife, Alice J. (Blaisdell) Pike, died March 2nd.

He leaves a son, Alden W. Pike, and grandaughter, Phyllis M. Dean, both of Worcester, and a niece.

Mr. Pike was a pipefitter at Heald Machine for many years until he retired in 1954.

He was a member and past president of the Worcester Beekeepers Association.

Mr. Pike was born in Paxton, son of Henry and Pauline (Blount) Pike.

Mr. Pikes' presidency he supervised and taught the Bee Schools for many years, supervised bee exhibits at Horticultural Hall, volunteered inspection for hives of private parties, gave lectures with slides on beekeeping, wrote *The History of Worcester County Beekeepers* (now in library), and started the Worcester County Beekeepers Memorial Library.

Whenever a beekeeper needed help to solve a problem Philip Pike would gladly assist in solving it. At age 94 he still helped those who asked for his assistance.

Until April of 1983 he still maintained three hives of bees and attended both Worcester and Norfolk Association meetings.

Philip Pike was voted Beekeeper of Year for Worcester County Beekeepers in 1983. He was also a member of Norfolk County and Worcester County Beekeepers Associations.

2nd Annual Honey Bee Management & Honey Production For Developing Countries May 26 — July 4, 1986

Date: May 26 — July 4, 1986 (Enrollment limited to 12)

Cost Training Fee — $2,400.
Sponsors will provide participants with regular per diem for non-academic participants, health insurance, and airplane ticket round-trip to El Paso, Texas. The University will provide ground transporation between El Paso and Las Cruces.

Continued on next page

Objectives (1) To give participants the knowledge, skills, and confidence to handle and manage honey bees and to teach others about them.

(2) To give particpants information and experience with different levels of beekeeping technology so they may select the proper one for use in their home countries.

(3) To help participants develop innovative skills in making and adapting beekeeping equipment using materials available in their home countries.

Content Participants will work in an apiary with honey bees and bee equipment each day during the workshop. They will become familiar with the management of bees in Kenya Top Bar Hives and U.S. Langstroth Hives. Participants will rear and introduce queen bees, produce new colonies of bees, remove and process honey by several methods, feed bees protein sugar feeds, trap pollen, and move bees to different locations. In addition, participants will take part in lecture-discussions on the biology of behaviour of bees, nectar and pollen sources, pollination of crop plants, diseases and pests, and the effects of pesticides on bees.

Language of Instruction Instruction is conducted in English, and participants need to be able to use the language proficiently. The course can be given in Spanish by arrangement for groups of six or more making application together. It can be given in other languages for groups of six or more who can accompanied by a translator with extensive knowledge of beekeeping.

Facilities The program will be conducted on the campus of New Mexico State University. Housing and Meal Service will be available either on campus or in the community. The estimated cost for six weeks is $1,350.00

Technical Leader Elbert R. Jaycox, Professor of Entomology at New Mexico State University.

Registration Contact: Dr. Paul E. Huntsberger, NEW MEXICO STATE UNIVERSITY, Box 3567, Las Cruces, New Mexico 88003. Phone: (505) 646-4735. TWX: 910-983-0549. **DEADLINE: May 1, 1986**

Beekeeping In China

Apiculture has rapidly developed in China. Western bees were first imported in the early twentieth century. At present there are about five million colonies in China producing 100,000 tons of honey per year, and over 400 tons of royal jelly per year.

Most apiary sites in China are small, containing about 50-80 colonies. An average beekeeper has only 30 colonies and is very meticulous. Along with honey and royal jelly, they also produce pollen and propolis as well. Average royal jelly production is 1.5 kg per colony per year.

Chinese bees are preferred because they survive well throughout the year in the subtropical mountains, whereas Western bees do not do well in the hot summer when there is little nectar. Chinese bees are kept in round wooden buckets in which the average yield is 5kg per colony per year.

Of the four million cultures of Western bees in China, the vast majority are Italian bees, followed by Carniolans and a few Caucasians. There are no large-scale queen rearing apiaries, and each apiary rears its own queens.

Varroa jacobsoni at first caused serious damage to colonies. The national Institute, after studying the life-cycle and behaviour of the mites, prepared a number of chemicals and Chinese medicinal herbs for killing them, and developed effective treatments for preventing and controlling the mites.

ILLINOIS

International experts on the Africanized Honey Bee will meet February 11 and 12 at the Westin Peachtree Plaza in Atlanta to explore ways for the U.S. to deal with future infestations of the feared insect.

The event is sponsored by the American Farm Bureau Research Foundation. Don Rawlins, Foundation Manager, said speakers will deal with all aspects concerning the insect but will give special attention to the main concerns of farmers and the general public about the bee.

"Four areas will be discussed," he said. "What farmers need to do to manage the bee, pollination differences between the Africanized Honey Bee and the European or domestic varieties, human health concerns and legal problems. Various Farm Bureau advisory committees will then consider recommendations for specific actions or areas for future research to be made tc the appropriate government bodies, universities or private industry."

Rawlins said the two-day program will include entomologists with a great deal of experience working with Africanized Honey Bees. Dr. David Fletcher, currently with the University of Georgia's entomology department, received his doctorate from the University of South Africa for his work on the wild bees. He will compare the characteristics of the "pure" or undiluted strain with those of Africanized Honey Bees found in the Western Hemisphere. Dr. Gard Otis from Canada's University of Guelph will discuss the bees peculiar swarming biology. Richard Cowden of USDA's Animal Plant Health Inspection Service will discuss entry prevention, detection and eradication procedures. Dr. David Roubick from the Smithsonian Tropical Research Institute will speak on the ecological impact of the Africanized Honey Bee. Dr. Orely Taylor of the University of Kansas, chief advisor in California's successful eradication project recently, will speak on population dynamics from Clearwater, Florida specializing in treating venomous stings, will discuss how to treat bee stings and related health problems.

There is a $30 per person registration fee and two luncheons will cost an additional $10 each. For a copy of the program or more information, contact Don Rawlins at the American Farm Bureau, 225 Touhy Ave., Park Ridge, Illinois 60068.

Continued on next page

Continued from previous page
NEWS & EVENTS

Intermediate Beekeeping Workshop in Arizona

A panel of beekeeping experts will lead a beekeeping workshop on Friday and Saturday, January 17 and 18, 1986 in Phoenix, Arizona.

The panel, consisting of Dr. Larry Connor of Beekeeping Education Service, Dr. Clarence Collison of the Pennsylvania State University Deptartment of Entomology, and Dr. Dewey Caron of the University of Delaware Department of Entomology, will present four sessions of one-half day each.

Session 1: Friday a.m. — Honey from Nectar Secretion to Marketing.

Session 2: Friday p.m. — Diseases and Mites (Biology and Control), and Pesticides.

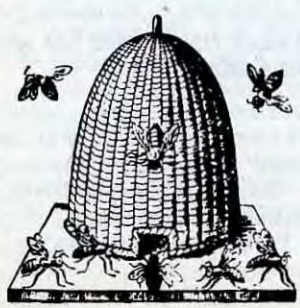
Session 3: Saturday a.m. — Bee Biology (African, Queens — Rearing without Grafting).

Session 4: Saturday p.m. — Intermediate Management (Including Imports and Honey Houses).

Video Tapes, Slides and Movies will enliven all sessions.

The workshop, held at the Agricultural Extension Service Building, 4341 East Broadway Road, Phoenix, will run from 8 a.m. to 5 p.m. both days. The cost will be $40 for the entire workshop or $20 for each day. The price includes lunch.

Pre-registration is required. Because limited seating is available and the event precedes the American Beekeeping Federation Convention, **early registration is recommended.** Prepaid registrations will be accepted in the order that they are received.



Registrants are requested to mail their names neatly printed, the day or days that they will want to register for, and their checks endorsed to Arizona Beekeeping Seminar to the workshop treasurer:

Mike Kuzmik
P.O. Box 25664
Tempe, AZ 85282

For futher information or a more complete outline call either Mr. Kuzmik at (602) 968-0969 or Brett Cameron at (602) 245-1391 or write Mr. Cameron at 6849 W. Lewis Ave., Phoenix, AZ 85035.

BELTSVILLE BEE LAB GETS NAME CHANGE

Beneficial Insects Lab is the new name of the formerly Bioenvironmental Bee Laboratory in Beltsville, Maryland. With the exception of the name, very little else has changed. Acting research leader, Dr. H. Shimanuki, reports that they have eight of the same people as before but lost one person who was working on a complete bibliography which, when completed, will make it possible for you to dial up the USDA Lab computer and it will, in turn, tell your computer all of the bee research that has been done in any particular area that your request. Although work is expected to continue to be done in this area in the future, at the moment it is on hold.

The major areas of research of this label have been nutrition, European foul brood, control of the wax moth and control of chalkbrood. They expect no changes in this emphasis in the near future.

The good part of the change is that it gives the bee research an opportunity to access a larger budget with the potential for expanded research in the future.

Probably the most important part that you should remember as a beekeeper is that now, when you want to send disease samples to the lab for testing, the address should be: Beneficial Insect Laboratory, Building 476-BARC-E, Beltsville, Maryland 20705.

FARM BILL

At press time the joint House & Senate committee mediating the differences between the bills passed by both legislative bodies has not dealt with the question of honey price support.

The House bill calls for a continuation of the program pretty much as is is but with a $250,000 maximum payment to any one recipient.

The Senate bill provides for a three year tapering off of the program with the Secretary of Agriculture having the authority to set support levels.

After the committee works out the details, the Farm Bill then must be passed by both houses and submitted to the President for signature.

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MAGAZINES

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

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

The INTERNATIONAL BEE RESEARCH ASSOCIATION urgently needs your membership and support to continue its work of publishing informatin on bees, beekeeping and hive products. Write for details about publications and the benefits of membership to USA Representative, H. Kolb, P.O. Box 183, 737 West Main, Edmond, OK 73034 (phone (405) 341-0984); or to IBRA, Hill House, Gerrards Cross, Bucks SL9 ONR, UK, regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Mail inquiries from USA: H. Kolb, P.O. Box 183,, 737 West Main, Edmond, OK 73034, Phone: (405) 314-0984. IBRA PUBLISHES: *Bee World,* a quarterly journal for the progressive beekeeper. *Apicultural Abstracts,* a survey of scientific literature from all languages. *Journal of Apiculture Research,* for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership $1. Specimen copies of *Bee World*; **Journal of Apicultural Research** or *Apicultural Abstracts* from INTERNATIONAL BEE RESEARCH ASSOCIATION, Hill House, Gerrards Cross, Bucks. SL9 ONR, England. TF

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

BEEKEEPING. A West Country Journal—written by beekeepers—for beekeepers. 1.50p inland or 1.80p ($4.00 Overseas). 10 issues yearly. Editor, R. H. Brown, 20 Parkhurst Rd., Torquay, Devon, U.K. Advertising Secretary, C. J. T. Willoughby, Henderbarrow House, Halwill, Beaworthy, Devon, U.K. TF

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

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

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

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

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

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Maxant 30 frame radial extractor, honey sump and pump, Clark bottler-mixer, Clark uncapper plus other honey house items. Total price for all $2000 or best offer. Hives, 2 deep—2 shallow, no wax, $40 ea. Robert Plourde, Box 151, New Boston Rd., Greenfield, NH 03047, Ph: 1-603-547-2047 after 6:00. 1/86

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Add for shipping packages via parcel post

1-2 lb. $5.00	3-2 lb. $9.00	2-3 lb. ..... $ 9.00
2-2 lb. $8.00	1-3 lb. $6.00	3-3 lb. $11.00

Add shipping prices to package if ordering by mail; Shipping charges include postage, insurance, special handling fees and handling charges. Insurance coverage is for full value of bees only. Insurance does NOT cover shipping charges. Personal checks, money order or cashier's check accepted in U.S. currency only. Queens are postpaid and shipped air mail. Shipments begin April 1st. Please indicate desired shipping date.

P.S. The State of South Carolina has never had a known case of Acarine Mite Disease.

HUCK BABCOCK — Queen Breeder

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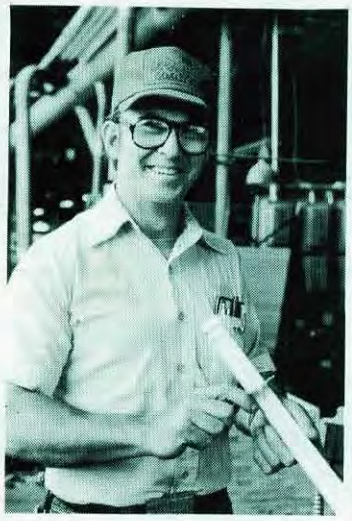

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