GLEANINGS IN BEE CULTURE

JUNE '86

BEE CULTURE

Have You Checked the Quality Of Your Combs Lately?

Dark, old brood combs with many drone cells or damaged spots can cost you money in the long run. Europeans have long believed old combs are a reservoir for disease organisms, so they follow a regular program of comb replacement to maintain top-quality combs in their hives. Even recent U.S. research claims that certain bee diseases may be promoted by old combs.

In addition, broken, damaged and misshapen combs reduce worker brood rearing space and fewer worker bees mean less honey. Old brood cells also have become smaller in diameter to the point that new bees emerging from these combs are smaller in size than those emerging from newer combs.

And, while you're at it, don't neglect your honey super combs. Broken or damaged combs not only mean less honey, but they make extracting a real chore. You know how difficult it is to uncap uneven combs and you've probably watched your extractor vibrate badly or dance across the floor because of damaged or unevenly drawn combs. Lastly, research over the years has proven that old, dark honey combs produce darker honey because of the accumulated residue in the cells.

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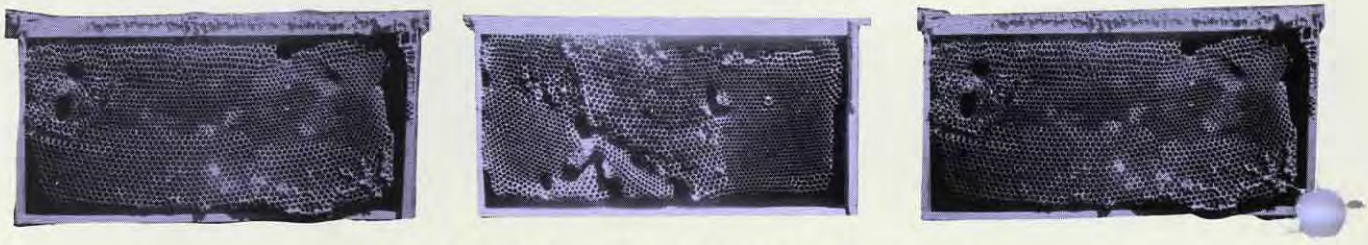

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GLEANINGS IN BEE CULTURE

Since 1873

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Created To Help Beekeepers Succeed

113 Years Continuous Publication by the Same Organization

THE WORLD'S MOST POPULAR ENGLISH LANGUAGE BEE JOURNAL

CONTENTS

COVER STORY

Let us not go over old ground, let us rather prepare for what is to come.

Cicero (106 - 43 B.C.)

INSIDE IN JUNE

We offer a wide range of topics this month — we hope a little something for everybody.

Our feature article, "Going For The Blue" by James Thompson, is must reading if you're new at the honey show game and an excellent review for those of you with some experience.

For the hard core "how to" readers, Steve Tabor offers the first part of his two part series on the use of Queen Excluders — excellent timing. As usual, the Bee Specialist, Elbert Jaycox, is good reading; this time looking at Bee Genetics and the African Bee, and Heat and Honey Production — from hive to storage. Speaking of storage, Dr. Morse has taken an in-depth look at Metals in Honey Processing Equipment; not often thought of but certainly important.

Clarence Collison has devised another brain teaser, so be prepared when you Test Your Beekeeping Knowledge. Dr. Tew, in his inimitable style offers his thoughts on beekeepers and beekeeping associations, and Richard Taylor takes a good look at Swarms and Swarming. Charles Mraz reviews some of the world's more exotic honeys; it will make your mouth water just reading about them.

Glen Gibson gives a brief overview of the why's and wherefore's of international marketing. Though fairly complex, this subject needs to be understood if we are to make any headway with the Washington Crowd. And speaking of Marketing, Mr. G. Kyle White tells about the Texas Honey Queen, an excellent marketing strategy when pursued correctly.

Finally, on a more philosophical level, "Do Bees Get Angry" looks at that often asked question — and poses some interesting answers. Of course, we've hidden a few other tidbits around, so enjoy.

NEXT MONTH IN *GLEANINGS.* July will feature good articles dealing with both diseases and pesticides. Not pleasant subjects but valuable information. Charles Koover will review molded plastic foundation as only Mr. Koover can. Another voice is heard regarding using and storing Queen Excluders, offered by Dr. Morse. These, plus the regular good reading from our columnists, coming in July.□

THE INNER COVER . . .

Kim Flottum

It seems there are several sides to the marketing coin. The ***industry self-help*** side, called the Honey Promotion, Research and Consumer Information Proposal is certainly prominent at the moment. As you read this, the ASCS is counting early returns from votes of eligible beekeepers, packers, and importers. If I understand the rules correctly, a ⅔ vote in favor of this proposal is required for passage. This is a clear majority of the voters in this industry voicing favor for this action. If it doesn't pass, I have been assured that the future of this type of program is in jeopardy. What would be needed is another proposal to the Department of Agriculture with increased evidence of passing. Then another vote with a ⅔ majority must be passed. Clearly, if this initial vote fails, there will probably not be another vote (i.e. program) in the near future. future.

Another side of this coin has been in circulation for quite awhile. I refer, of course, to the ***political arena*** the industry is involved in. This aspect has several faces, all of which deserve attention.

One face involves the honey price support program. The smoke hasn't cleared from the Gram-Rudman Bomb but indications are that not only will the 4.3% cut stick, but greater cuts await down the road. This does not bode well for a program without overwhelming support in the halls to begin with. If price supports are to be utilized to the fullest, then the powers that be must become acutely aware of the importance of our industry. Cards and letters welcome.

The Washington contingent is also dealing with continued and ever increased, support for the USDA Research facilities. Coupled closely with this is the struggle for a National Extension Apicultural position. This needs to be well defined and supported by any and interested individuals. Again, cards and letters welcome.

The third face in this political arena is trying to address the ***import situation.*** Increasing tarriffs on foreign honey is the goal — with probably two chances of happening; slim and none. At least for the moment. But this too may pass. My guess is that it will pass like a gall-stone from the bowels of the present administration. Like I said — slim and none.

There is a third side to this odd shaped coin. It falls directly in the hands of ***any beekeeper trying to sell a jar of honey.*** A lot, a whole lot has been written about marketing honey. A thousand good ideas have been brought forward for any and all to exploit. And every month more come to the surface; from easy and inexpensive to sophisticated and costly. The choice is yours.

This quick overview has not covered all the details of this many-faced coin. And you have heard most of this before. But the point I'm trying to emphasize is just that — there are many faces to this coin. Many reasons for the price of a jar of honey, both today and next week.

I haven't seen enough evidence that one approach is better than another, or that just one road should be chosen.

Joining, or at least supporting the industries self-help program has some definite pluses. This applies to not just the direct benefit gained, but from the improved image we will have in the eyes of the media and Washington.

Maintaining pressure on Representatives in the fair city will also keep them informed of our situation, and with luck increase their support on our behalf. And finally, individual efforts at efficient, cost effective and profitable honey sales marks the bottom line.

Keeping bees is fun. Occasionally it's sweat, pain and long hours. And it's an investment — for business or hobby. To protect this investment and to insure continued enjoyment, sweat and pain, examine all the faces of this coin. Then use the coin wisely, where it will do the most good — don't just put it in your pocket.

•

My friend Duffer called the other night. He was in an uproar about the new strain of honey bee showing up over in Europe.

But to understand why he was in an uproar I need to tell you a little bit about him. Duffer is the world's best procrastinator. He will undertake a project and then research it to death. He knows more about how he would do things, if he ever got around to doing them, than anybody I've ever met. This extensive research includes numerous phone calls to the 'Experts', much reading of the 'Current Literature' and quantum leaps in Logic.

He has one other trait that I guess sort of goes along with his researching. He collects things. Anything. Everything. This is usually the first step in one of his projects. He takes possession of something, then designs a project for its use. Unfortunately, most projects never get finished. In fact, most don't even get started.

This is how he got into the bee business. He 'took possession' of a couple of colonies at an auction last year. Owning 'things' is a way of life for Duffer, but owning 'Living Things' was a whole new ball game. This opened up possibilities for projects never before dreamed of.

It also opened up a field of research that could, if one isn't careful, take an entire lifetime to investigate without ever having to crack a super.

Since he took possession in December (this is Wisconsin where the big red "W" stands for Winter), there was a period of time when little had to be done. He started by studying the basics, reading all the appropriate books and pamphlets and calling a few of the 'experts'. The more he studied, the more difficult his possession seemed to become. There were so many unanswered questions that simply must be addressed. Dancing, swarming, absconding, feeding, queen pheromones, pollination, wing hooks, supers — the list was infinite but Duf-

cont pg 304

Gleanings Mailbox

We supply the following for your information.

A NOTICE TO OUR READERS About Mail-Order Purchases

1. *Never send cash.* Always use a check, money order or credit card.
2. *Keep a copy of all transactions* especially cancelled checks, money order receipts and correspondence. For phone orders make a note of the order including merchandise ordered, price, seller's name, address and telephone number, salesperson's name, order date and expected delivery date.
3. *Understand the seller's return and refund policy* including the allowable return period and who pays the postage for returned merchandise.
4. *If you should have a problem with your order or merchandise, write a letter to the seller* with all of the pertinent information. Telephone complaints should be followed up with a letter of confirmation. Keep copies of all correspondence.
5. *If you have thoroughly followed up in writing* with the seller on your problem and still are not satisfied, contact the consumer protection agency in the seller's state or your local U.S. Postal Service.

Dear Editor:

There is a dumpster just outside the back door of the hospital that I work at where employees can drop their aluminum soft drink cans to be recycled. That money then goes into an employee emergency fund.

I suppose about half of the cans had diet drinks in them and I got to wondering if the bees that work them can tell the difference between Nutra-Sweet and sugar. And then a funny thought hit me. Could I feed my bees a Nutra-Sweet syrup and get them to produce a low calorie honey?

Jack C. Torkelson
Rt. #1, Box 286 Osborne Road
Greenbrier, Tenn. 37073

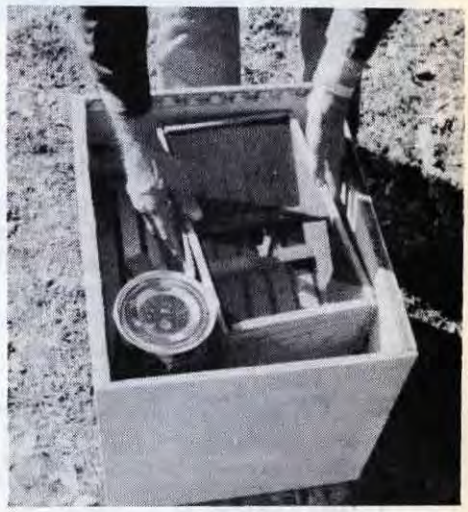
EDITOR'S NOTE: Would you call it "Honey Lite"?

Dear Sirs:

I would like to suggest another way to introduce package bees. I bought a few packages of bees about thirty years ago. When I introduced them the day was warm and some hives wound up with a lot of bees and some with little. I knew there must be a better way. Soon I had it figured out. I introduced the next ones without bees flying around.

First, I close up the front and put a 6-5/8" empty super over the hive, my feeder can in one corner. I use a two pound coffee can with holes in the lid (never punched, it will close up again). Then I remove the cardboard over the feeder can and make the top of the package smooth, then raise the can and get the cardboard under one edge sliding across slowly as the can comes out. I then punch a bigger hole in the can and pour the contents over the bees. Next, I raise the can and slam it down hard on a two by eight or concrete block. Quickly sliding the cardboard back, with one finger I flip the queen cage out, sliding the cardboard back quickly. In warm weather some bees will be hanging to the cage, in cool weather none. After preparing the queen cage, I pick up the package with one hand on the cardboard and one on the bottom. Then I lay it on its side putting the queen cage in front of the hole, screen side up, sliding the cardboard back as I draw the inner cover over the top. The next day I open it up about an inch and bees will boil out. But they stay put.

R. E. Johnson
Star Rte. Box 288
Desoto, MO. 63020



Dear Editor:

Please quit increasing the cost of your magazine. Honey prices aren't going up; wax prices have fallen and every time I get a bee supply catalog, those prices have gone up. Bee yard locations are getting harder to find and vehicle maintenance costs continue to rise. And, more and more insecticides are used every year.

R.H. Irvin
Woodward, OK. 73801

EDITOR'S NOTE: Actually, I think Gleanings continues to be a bargain. Solutions, or at least partial solutions to these problems are available every month. Postage rates, paper prices and labor continue to rise. I wish I could help.

Dear Editor:

I find the idea of an observation hive as written in "Observation Super", page 115 of the March issue

intriguing. However, several points concern me.

The solvent toluene used by the author to clean the viewing ports of burr comb and propolis is an extremely hazardous material. It is both poisonous and highly flammable. Nearly all solvents are poisonous and flammable. But a better choice, in my opinion, is isopropyl (rubbing) alcohol. It is easier to obtain and while still a dangerous material, significantly less hazardous to the user and environment.

The article states that the clear plastic used for the observation ports is plexiglass. I believe another clear hard plastic marketed by GE under the tradename of Lexan was the material actually used. In my experience, plexiglass is attacked by a number of solvents including toluene. Alcohol will not attack plexiglass or Lexan. When plexiglass is exposed to the more aggressive solvents, the surface is dissolved. This results in a frosted appearance which is permanent. Be advised that alcohol will not clean wax and propolis as quickly as toluene. More "elbow grease" is required. But the difference in the level of hazard makes alcohol the solvent of choice to my way of thinking.

Anyone planning to use plastic for a viewing port will be happier in the long run if they specify or find Lexan rather than plexiglass. As stated above, Lexan is more solvent resistant. It is also less prone to discolor due to exposure to the sun. Plexiglass tends to yellow with time.

Daniel L. Rodkey
RR7, Box 148
Frankfort, Ind. 46041

EDITOR'S NOTE: Thanks for the tip. Toluene is an incredibly dangerous material. It is suspected of carcinogenic properties also. For more information on cleaning see below.

Dear Editor:

Here's a tip on cleanup, perhaps of interest to your subscribers.

Cleaning beeswax from extraction equipment, and from household jars that have contained cut comb honey is greatly facilitated by adding some household ammonia to the hot sudsy water being used.

For example, to clean adhering wax from the wide mouth quart glass jars we put our home-grown honey in, we almost fill the jar with hot soapy water, add a couple tablespoons of household ammonia, cap the jar and set it aside for 2 or 3 days. Then the formerly adhering wax peels loose from the insides of the jar like a skin.

An extractor can't be allowed to sit around for days with water in it, but ammonia added to the hot soapy water during cleaning and scrubbing the basket and sides, does seem to cut the wax.

R. Kenneth Smith
Box 968
Alturas, CA 96101

Dear Editor:

I am using the CC Pollen traps made in Arizona. They work the best for me. I have tried a couple of others with little success. I have been using them now into my fourth year. I have had my problems with them though. During the previous years I lost several good hives because when the traps were put on and the bottom exit closed off, the bees would crowd and plug up the bottom and suffocate and die. This continued until they finally got used to going out the slot made for their exit/entry. Also, if the colony survived, they eventually dwindled down till they died out.

So, experimentor that I am, I drilled a 3/8" relief hole on the side towards the rear of the unit. Well, I hit pay dirt. The colonies are now very strong and also for the firs time I have seen many drones. Because of the new hole, the drawers are nearly always full and need to be cleaned out every four days or so. I might add here, that I don't use the standard bottom board. My bottom board is about 2" deep with a false bottom above the regular bottom and slots cut on each side in the backs for the bees to normally come out. The false bottom keeps the bees from getting a draft up the bottom of the frames during cold wintery months and also when they are moved. They work great.

John J. Raptis
116 Wellington Drive
San Carlos, CA. 94070

RELIEF TO BEE STINGS: AT WHAT COST?

Dear Editor:

The note by James Logan on allergy to bee stings (Gleanings, March 1986) is an optimistic and entertainingly written story about a problem of potential concern to many of us. Unfortunately, the upbeat optimism of the story can be misleading. I have some technical complaints with the note[1], but I feel these are benignly harmless for this discussion.

When discussing insect sting hypersensitivity, we should always keep in mind at least two facts, 1) only 40 people per year die in the US as a result of stings from ***all*** insects (not just honey bees) and 2) immunotherapy costs between $400 and $1000 per year per person, and is presently recommended for life. By combining this information with Logan's estimate of ten million venom allergic persons in the US, we find that to protect all allergic people would cost 4 - 10 billion dollars per year, or 100 - 250 million dollars per potential life saved! And that money usually comes out of the individual's own personal pocket.

Needless to say, the issues of venom allergy, human psychological reactions to it, and how to best treat it are extremely complex and there are no simple solutions[2].

References

1. An "antivenom" is not produced from venom sac extracts; what actually is produced is a venom extract to be used for immunotherapy (an antivenom nutralizes the poison that is injected into your body by a venomous animal, venom immunotherapy is administered before an insect sting to alter the body's immune response in such a way as to prevent future allergic reactions to stings); I have seen no evidence that the development of an "immunity pill" is being seriously pursued, or is plausible in at least the next several years; I am aware of no reports or evidence that fair or non-fair complexion influences the outcome of an allergic reaction; and I do not feel it is fair to "ballyhoo" only the achievements of the Johns Hopkins group when a great many individuals and other teams have made major contributions in the area of venom allergy research.

2. Schmidt, J. O. 1983. Hymenopteran envenomation. In "Urban Entomology: Interdisciplinary Perspectives (G.W. Frankie and C.S. Koehler, eds.), pp. 187-220. Praeger: New York.

Justin O. Schmidt
1961 W. Brichta
Tucson, Arizona

Dear Editor:

I am a researcher in Bee Management, Diseases and Products here at Njiro Beekeeping Reasearch Centre. I wrote to Dr. Pickard who is a senior lecturer in Apiculture at Cardiff and inquired on the possibility for me to study there. He accepted, and sent me the syllabus of the Diploma in Apiculture conducted there. The topics covered are very much relevant to my work and would be of much help if I am given the chance to pursue the studies. The duration of the course is nine months, and may lead to a masters degree.

The course commences in October each year, and ends in June the following year. It is my ambition to join the course this October but unfortunately I have tried all I can to secure sponsorship from all possible places, but in vain. I am now requesting your kindness on this matter and please sponsor me for these helpful studies.

L.O.N. Mollel
Njiro Beekeeping Research Centre
P. O. Box 661
Arusha, Tanzania

Dear Editor:

My name is Greg Schechtel. I'm from Portland, Oregon. I have been a Peace Corps volunteer since July, 1983, working in natural resources conservation, first as a forester and more recently as a beekeeper; the two fields being quire thoroughly related. In this small country, upwards of 200,000 hectacres (500,000 acres) of tropical and sub-tropical forest lands are disappearing annually; mostly being converted to agricultural use. Of the more than 165,000 small farmers here, the majority still employ quite antiquated methods and the resultant degradation of the land is phenominal. There is also, of course, the consequential loss of animal habitat, and among those endangered are the bees as well. The farmers do not understand the importance of the bees for pollination of their crops and are largely unaware of the "beekeeping" possibility. But they all just love that multi-flower honey and they usually completely destroy the wild hive in order to harvest but a small amount.

Continued on Page 302

Monthly Honey Report

June 1, 1986

The following figures represent current prices reported by our contributors. 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.

Reporting Regions

Wholesale Extracted

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer.

Containers Exchanged	1	2	3	4	5	6	7	8	9	R	A
60 lbs. (per can) White	42.00	34.00	31.20	47.50	35.00	36.40	33.00	37.50	43.20	30-47.50	37.76
60 lbs. (per can) Amber	40.00	30.50	25.20	42.50	32.00	32.40	31.20	36.25	41.70	24-40.00	34.64
55 gal. drum/lb. White	–	.50	.52	.47	–	–	.56	.59	.58	.46-.61	.54
55 gal. drum/lb. Amber	–	.46	.42	.58	–	–	.48	.55	.54	.40-.59	.51
Case lots — Wholesale											
1 lb. jar (case of 24)	30.50	25.95	23.50	26.28	31.00	23.65	24.78	25.35	25.20	22.80-32.50	26.25
2 lb. jar (case of 12)	31.00	23.30	22.25	20.59	–	22.90	22.18	33.10	–	17.42-34.50	25.05
5 lb. jar (case of 6)	32.00	27.80	24.00	25.50	–	26.25	22.28	25.10	25.50	21-34.00	26.05
Retail Honey Prices											
½ lb.	.95	.84	.75	.86	.85	.90	.90	.87	.95	.65-1.10	.87
12 oz. Squeeze Bottle	1.50	1.32	1.19	1.05	1.45	1.25	1.31	1.20	1.38	1.17-1.57	1.29
1 lb.	1.63	1.59	1.35	1.57	1.67	1.37	1.50	1.61	1.57	1.29-1.79	1.54
2 lb.	2.70	2.84	2.65	2.35	3.65	2.36	2.93	2.79	3.09	2.35-3.75	2.82
2½ lb.	3.55	–	–	3.03	4.55	3.25	3.50	3.50	–	3.03-4.60	3.56
3 lb.	4.00	4.39	3.22	3.59	4.98	3.85	3.83	3.74	3.70	3.15-4.98	3.92
4 lb.	5.00	5.42	4.25	–	–	4.90	4.65	4.75	–	4.25-5.89	4.83
5 lb.	6.00	6.50	5.25	5.50	5.70	5.77	5.68	5.62	5.62	4.95-6.50	5.74
1 lb. Creamed	–	1.73	1.40	1.56	–	–	1.55	1.56	1.53	1.35-1.73	1.56
1 lb. Comb	2.25	2.01	2.63	1.75	1.85	1.80	2.75	1.88	1.88	1.50-2.52	2.09
Round Plastic Comb	1.75	–	1.85	–	1.99	–	1.83	1.69	1.69	1.63-1.90	1.80
Beeswax (Light)	–	1.88	1.02	1.05	1.20	1.12	1.03	1.15	1.15	.95-2.75	1.20
Beeswax (Dark)	–	.90	.85	.90	1.07	1.00	.95	1.09	1.09	.85-1.18	.98
Pollination (Avg/Colony)	–	23.50	27.50	–	24.50	–	22.70	19.50	19.50	21.25-27.50	22.87

New Features on Honey Report Graph

On the far right hand side you will see two new columns. The first, labled "R" is the range of prices reported from all contributors — lowest to highest. This will give you an idea where you stand nationally. The second column, labeled "A" is the average price of a particular commodity across all regions. Example: the range in price of a 1 pound jar of honey sold retail is $1.29 — $1.79 and the average price across the country is $1.54.

In the comments section you will see a figure called the "Price Index". This figure is only a descriptive statistic that compares all regions to the highest region of the month.

Example: Region 1 has a price index of 1 this month and remaining regions are compared to that index.

Note: These figures are only as good as the data sent in by our reporters. If you believe the numbers here are not indicative of your area please contact the editor—we can use your imput.

Region 1

Price index rating of 1.00. Sales steady to increasing. Some winter loss due to low snow cover and short fall flow. Higher in Northern than Southern regions.

Region 2

Price index rating of .64. Sales steady to declining. Early flows providing most food, some feeding required in Northern areas. Guarded optimism regarding coming season.

Region 3

Price index rating .65. Sales brisk to moderate. Early crops being worked and low winter losses provide increased potential for spring build-up.

Region 4

Price index .85. Sales steady to slightly improved. Colony conditions regarded as normal. Favorable weather indicates strong early flow.

Region 5

Price index .76. Sales depressed. Early spring has caused early swarming in some areas, while feeding required in others. Dry weather is major factor in variance of areas.

Region 6

Price index .87. Sales steady. Early spring causing some swarming problems, with flows moderate to heavy. Other areas have light flows and little swarming problems.

Region 7

Price index .67. Sales variable, mostly low. Texas is extremely dry. Sales of peripheral products (equipment, bees, etc.) down with little improvement in sight. SE portion seems better off than most with favorable weather and flows.

Region 8

Price index .76. Sales steady to slow. Some feeding in Colorado required yet, Arizona has promise of good Mesquite. Montana suffered late frost with heavy loss of early crops.

Region 9

Price index .77. Sales generally slow, especially in North. Early pollination in full swing and other early crops producing well.

? Questions & Answers ?

Q. Some of my hives have a deep super for brood topped with shallow super for food. These brood chambers are about four years old and I would like to add another deep super with frames and wired foundation in hopes of providing them with a new brood chamber. My idea was to place the new chamber on the bottom board with the old brood chamber and food chamber on top. Will this work? Walter Davis Smith, 76 Smith Road, Waverly, Ohio 45690.

A. I agree with your idea of providing all of your hives with a double brood chamber, in this case, 2 hive bodies. I think, conservatively, 80% of the beekeeping done today utilizes a brood chamber such as this. As far as adding the new brood chamber, I would follow a bit different course than the one you outlined. Rather than putting the new hive body on the bottom, I would take what is now your top or shallow super, and place it on the bottom board with the new hive body directly on top. You may also place the old hive body on top at this time. In approximately 3 weeks you should be able to remove the shallow super, which you had placed on the bottom of the hive, leaving the two hive bodies as the brood chamber and adding your honey supers above it. The reasoning behind this is quite simple. During the winter and early spring the cluster in the hive has a tendency to move up and more often than not the bees will be gathered in this top shallow with only a scattering of bees remaining below. As a matter of fact, it's not at all uncommon to find that the bottom hive body is completely deserted in the early spring. Placing the shallow super with the cluster of bees in it on the bottom with the new hive body on top will encourage the bees and queen to expand upward and outward away from the hive entrance and, in this case, away from the shallow super. Any pollen and honey remaining in the shallow super will usually be carried up to the hive body and after a very short period of time, this bottom shallow should be almost completely void of brood and stores. Be sure that you return in time to remove, or again reverse, this shallow super. Move it to the top of the hive so that it does not become a permanent part of the brood nest.
— Dick Kehl

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Q. Is it necessary or effective to reverse the two stories of a hive in the spring? Marshall T. Slotterbach, Sellersville, PA.

A. It does inhibit swarming, at least temporarily, by splitting up the brood nest, but it must be repeated every couple of weeks to get that result. It is extra work, and I rarely bother with it.
— Richard Taylor

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Q. When introducing a new queen in a Benton cage, is it necessary to remove the attendant workers? C.H. Hansen, Bloomfield, NJ.

A. It is not necessary to remove them when introducing the queen to a nuc, or to the part of any division that has been removed from the parent stand. If you are introducing the queen to an established colony that remains where it is, however, and to which the field bees are therefore returning, then it is best to remove the attendants — indoors, just in case the queen gets out too.
— Richard Taylor

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Q. I have an apiary of eight colonies thirty-five miles away, and am thinking of shook swarming all of them so I wouldn't have to check so often for queen cells. Would that work in reducing the number of trips? Mike Townsley, Muscatina, Iowa.

A. I think that is not a good idea. You would have to keep a close eye on them for the first two days, to prevent absconding, which is always a problem with shook swarms. And if you have in mind using this method to raise comb honey, then you would have to make frequent trips to avoid travel stained sections. If you want to get extracting honey there, I think a much better system would be the one described in the May '86 "Bee Talk".
— Richard Taylor

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Q. I want to put up some purple martin houses, but I am told these birds feed on honey bees. Do they? Scott Crawford, Jackson, TN.

A. J. I. Wade, author of THE PURPLE MARTIN: AMERICA'S MOST WANTED BIRD, says they do not prey on bees to any significant extent, but are often confused with the bee martin, or kingbird, which does feed on bees. The analysis of the stomachs of 200 purple martins disclosed only five honey bees, all drones.
— Richard Taylor

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Q. How can I get the bees out of a box hive and into a regular ten-frame hive? Hugo Halstrom, Eben, MI.

A. Best way is to turn the box hive upside down, make a hole in the bottom and set your ten-frame hive, equipped with combs or frames of foundation but without any bottom board, directly over that hole. Arrange some sort of separate entrance for the ten-frame hive. In about a month the bees will have abandoned their box hive below and taken over the proper hive on top.
— Richard Taylor

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Q. Do you recommend the slatted rack on the bottom board? Frederick Walliser, Philadelphia, PA.

A. It is one way of improving hive ventilation, but it is also an additional piece of equipment and I know of no commercial honey producer who uses them.
— Richard Taylor

Continued Next Page

Q. We expect to produce about fifteen thousand sections of comb honey this year, and rather than invest in a large freezer we wonder whether it is possible to use an inert gas like CO_2 to control wax worms. Kent and Sharon Wenkheimer, Peck, Idaho.

A. I regret that I have no experience with inert gas for this purpose, and will welcome comment from any reader who has. Carbon dioxide would be harmless to the honey, but I am skeptical whether it would get the tiny wax worms. It would probably not affect the eggs. To control wax worms with a freezer you do not need one large enough to hold the entire crop. You could deal with a thousand or so at a time. You might also look into renting space in a commercial freezer locker. I once checked this out and found it was very cheap.
— Richard Taylor

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Q. I wish to take up beekeeping for a significant supplement to my normal income. Could you please advise me with respect to chunk honey, round sections and extracted honey? And also on the races of bees? Dale Harstick, Coulterville, IL.

A. Most customers want extracted honey. The advantage of comb honey is that you need no extracting equipment, which is a great saving of space and overhead. Chunk honey brings a good price, but its appearance and saleability are sometimes spoiled by partial granulation. Round sections are exceedingly easy to harvest and pack, but the per-unit packing cost is higher than the others. I suggest you get a small extractor and go for extracted honey plus round sections. As for bees, try Italians and Carniolans and see which you like best.□
— Richard Taylor

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Book Review

By RICHARD TAYLOR

Keeping Bees, by John Vivian. Charlotte, VT, Williamson Publishing Co., $10.95

There is no end to the writing of manuals on beekeeping, but this one is better than most. Mr. Vivian is a true countryman who loves his craft and is skilled in explaining its fine points to beginners. He has illustrated his book with his own photography, giving it a nice personal touch, as well as with drawings by Liz Buell which are better than any I have seen for conveying exactly how things are done and made in beekeeping. Mr. Vivian even makes his own foundation, and explains how. There is a good chapter on hunting "wild" bees, another on beeswax candles, a good discussion of the tracheal mite, and solar extractors. The book is so clearly written that it is a pleasure to read, even if much of what is said is not new.

— Richard Taylor

Book Review

Timely Chats, the late Bill Carlile's monthly beekeeping column published in the ***American Bee Journal*** for many years, has been put into book form. Rachel Carlile, Mr. Carlile's widow, deserves much credit for her effort in compiling all of Bill's monthly columns and photos and then seeing this time-consuming project through to a successful fruition.

The 234 page book is attractively bound with a maroon colored hard cover and the title is printed in metallic gold. All of Bill's regular columns, in addition to many special articles, are reprinted exactly as they appeared in the ***American Bee Journal***. Special effort was put into using high quality paper to obtain the best black and white photographic reproduction possible. The columns are printed month by month so that readers can turn to the months of the bee season about which they are most concerned to read Bill's timely management tips.

Timely Chats, the book, like ***Timely Chats***, the column, is an interesting collection of beekeeping topics written in an informal style that can be comprehended easily by the reader. Not only will this book make a valuable addition to your beekeeping library, but for those many beekeepers over the world who knew Bill personally or through his writings, it will remain a treasured keepsake. Since Mrs. Carlile has only printed a limited number of this hardbound edition, we suggest that interested persons send their order to her soon while copies last. The cost of the book is $23.50 postpaid and the address is: Timely Chats, 308 South Myrtle St., Glenwood, Iowa 51534.

Testing Your Beekeeping Knowledge

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

Pollination has long been recognized as the most important contribution that the beekeeping industry makes to agriculture. Recent estimates have indicated that the value of insect pollinated crops in the United States is over $20 billion. As agriculture has changed over the years from the small, diversified family farm to large monocultures (large acreages of a single crop), the need for honey bees has greatly increased. In addition, as plant breeders develop new hybrid varieties, cross-pollination resulting from insect visitors has become an integral component in varietal development and seed production.

How well do you understand pollination biology and honey bee foraging behavior? Please take a few minutes and answer the following questions to find out how well you understand this important topic. The first five questions are true and false. Place a "T" in front of the statement if entirely true and a "F" if any part of the statement is incorrect. (Each question is worth 1 point.)

1. _____ The number of foraging honey bees (potential pollinators) flying from a colony is directly proportional to the overall adult population.
2. _____ Even though peanuts are basically self-fertilized, bee visitation to the flowers results in higher yields, larger nuts and more nuts per pod.
3. _____ Honey bee colonies should be moved into pear orchards within 24 hours after the trees begin to bloom.
4. _____ Auto-pollination is the transfer of pollen from the anther to the stigma of the same flower, or another flower on the same plant or other plants of identical genetic material.
5. _____ Honey bees visit buckwheat flowers only in the afternoon for nectar and pollen.

Multiple Choice Questions (1 point each)

6. Winds in excess of _____ mph will cause foraging honey bees to stop flying.
   A) 10 B) 5 C) 25 D) 15 E) 20
7. Race of honey bees with the longest tongue, thus are excellent pollinators of deep flowers such as red clover.
   A) Cyprian B) Italian C) Caucasian D) Carniolan E) Egyptian

The reproductive organs found in flowers vary greatly in structure and rates of development. Listed below are three different classes of flowers. Please match the flower type with the correct description.

A) Hermaphrodite B) Pistillate C)Staminate

8. _____ Flowers having only functional male reproductive organs.
9. _____ Flowers having both male and female reproductive organs.
10. _____ Flowers with only functional female reproductive organs.
11. What is the difference between a pollinizer and a pollinator?

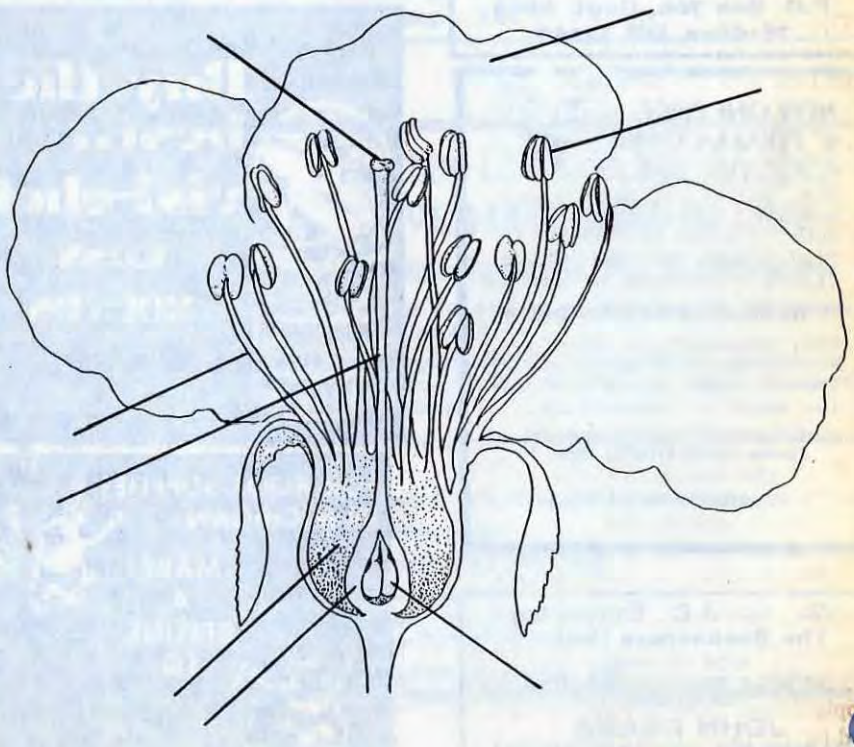
(Question is worth 2 points.)

_____

_____

_____

12. Listed below are several parts of the flower involved with pollination. Please label the flower correctly. (Question is worth 8 points.)
    A) Anther B) Ovary C) Nectary D) Petal E) Ovule F) Stigma G) Filament H) Style



(Answers on Page 306)

Research Review

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

The Use of Various Metals in Honey Processing Equipment

I was asked recently about using aluminum for making honey processing equipment. I have been aware that for a great number of years the food processing industry has had a strong preference for stainless steel, but I wasn't certain of all the reasons behind this. This caused me to search some of the food processing literature, as well as to review some of our own studies.

The food industry's favorite stainless steel contains 18 per cent chromium and 8 per cent nickel. This makes a rustless alloy with a long life. The most popular finish for stainless steel is what is called #4. It does not show scratches, is easy to clean and has a smooth surface. There are stainless steel finishes that are more mirror-like, but it is more difficult to keep them looking spotless.

The chief reasons for using stainless steel is that it is practically insoluble in most food products, does not cause off-flavors, cleans easily, has an attractive appearance and is relatively easy to weld. The disadvantages of stainless steel are that it is expensive, sometimes difficult to work into different shapes and that it can be corroded if it is not properly cleaned. So long as stainless steel surfaces are exposed to the atmosphere, the surface remains passive, that is it has the best corrosion resistance. The best protection for stainless steel food processing equipment is to make sure that it is thoroughly washed and dried after use.

Aluminum in Food Processing Equipment

Aluminum is widely used in the food processing industry, but it is not satisfactory for honey that is an acid food. Most people do not think of honey as an acid food for in reality it contains very little acid. It is merely that it is a very poorly buffered solution and the little bit of acid that is present causes honey to have a low pH. pH is really an indication of the degree of acidity. Honey has about the same pH as does vinegar and wine even though there is nowhere near as much total acid present. It is well known in the food industry that products such as pickles, which are packed in vinegar and are called acidified, must be treated with special care. The chief disadvantages of aluminum are that it is easily corroded by both acid and alkaline solutions. Another disadvantage is that sheet, or thin aluminum is easily dented making it both weak and difficult to clean. Still, aluminum is far better than copper, brass, galvanized iron or iron, all of which are much more easily corroded by honey than is aluminum. None of these metals should be used for honey processing equipment under any circumstances. Most of what is written above is taken from the book by Farrall (1976).

Becker (1943) reported that an aluminum casting in the bottom of a vacuum pan used for honey dissolved. He found a "white paste" on the bottom of the pan after honey had been proceed in it. There is no indication how long it took for this to take place. The way in which the note is written indicates it did not occur rapidly.

Other Metals

The late Professor E. J. Anderson and M. Wood (1944) of Pennsylvania State University placed several weighed pieces of black iron, galvanized iron, tin plate, copper and aluminum in honey for varying periods of time at both room and elevated temperatures. Details concerning their experimental procedure are lacking, but their paper reports that all of these metals lost weight over a relatively short period of time. The black iron lost the most weight, nearly 200 times more than did the aluminum that lost the least. Tong et al. (1975) found that there was more zinc in honey that had passed through an extractor made of galvanized iron than there was in that taken directly from the comb; high levels of zinc can be toxic to humans. These data merely confirm what is written above to the effect that only stainless steel should be used in honey processing equipment.

The Effect of Stainless Steel on Acid Foods

A few years ago several of us interested in food processing (Stoewsand, et al, 1979) collected acid foods that had been processed in stainless steel equipment to determine if any of them would pick up chromium or nickel. The foods included acidified red cabbage, sauerkraut, honey, vinegar, cheese whey, wine and hard cider. From the point of view of public health the concentrations of chromium and nickel found in these food products were very low and did not constitute any hazard to customers. Interestingly, when we analyzed honey directly from the comb we found that while it was somewhat lower in chromium it was as high or higher in nickel than were the honey samples that have been processed in stainless steel equipment.

Honey and Food Inspectors

Over the years the Pure Food and Drug Administration and food inspectors in general have paid scant attention to the beekeeping industry. This has been simply for the reason that we have very few, if any, food processing problems. Honey does not go rancid or spoil rapidly, harbor active bacteria or in general pose a threat to human health. In some ways this has worked to our disadvantage. The milk industry, for example, was forced to switch to stainless steel equipment many decades ago but the honey industry was not. Unfortunately it is not difficult to find some old-fashion galvanized iron honey extractors still in use. Since iron is generally not considered toxic to humans there has been little concern about this. The normal quantity of iron found in honey is about 8 to 10 parts per million, but we are aware that some of the honeys from abroad have a very high iron content (Doner and Jackson, 1980; Morse and Lisk, 1980). This is probably because of the equipment in which it is processed.

Continued on Page 279

Texas Elects a Honey of a Queen

By G. KYLE WHITE

What does it take to win the title of Texas Honey Queen? If one were to ask Cindy Neal, the recipient of that honor for 1986, she might answer, "Hard work. Definitely hard work."

But she would be just as quick to reply that although winning the title of 1986 Texas Honey Queen was a lot of hard work, she really didn't mind, because promoting honey and the beekeeping industry is something that she really enjoys.

Cindy Neal of Bells, Texas was crowned the 1986 Texas Honey Queen by the Texas Beekeepers Association at their annual convention held October of 1985 at Lubbock, Texas.

Cindy, a physical therapy major at Texas Woman's University in Denton, Texas was chosen by a panel of five judges who based their decision on her prepared and impromptu speeches, sales presentation and personal interviews. Also the fact that Cindy owns three bee hives and sells her own honey played well in her favor.

To any one who doesn't know Cindy, it would appear that she has had to sacrifice a lot to get to where she is, but to listen to her speak, one would be convinced of just the opposite.

"I wouldn't call what I've done a sacrifice," says Cindy, "because I enjoy being around people and beekeepers are really sweet. I did do a lot of hard work, but when you enjoy something it doesn't seem like work."

Cindy's career in beekeeping began four years ago. At that time, Russell and Denise Green, family friends and owners of Green's Honey Farm in Ector, Texas invited Cindy to a seminar on beekeeping.

"Cindy appeared to be a bright and intelligent young lady," Denise said. "We felt that by getting her interested in beekeeping, we'd not only be doing her a favor, but ourselves one as well."

Cindy soon began to represent the Green's as their Junior Honey Princess. Later, she became Texoma Honey Queen representing the Texoma Beekeeping Association. It was as a representative of this group which made it possible for her to attend the Texas Beekeepers Association convention and win the title of Texas Honey Queen.

"The time I spent as Green's Junior Honey Princess was really invaluable to me," Cindy said. "It taught me how to speak before a large group without getting nervous. If it hadn't been for my time spent as Green's Junior Honey Princess and Texoma Honey Queen I don't think my winning the Texas Honey Queen title would have been possible."

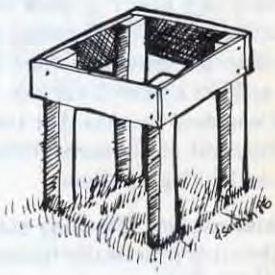
Cindy's duties for the up-coming year will be to travel around the state of Texas promoting honey and the beekeeping industry. Since Texas is celebrating its 150th birthday, Cindy plans to use her appearance in Sesquicentennial festivities to educate the public about the benefits of pure and natural honey.

"I hope to show the public that the honey bee's main benefit is not honey, but the pollination of crops," she says. "Why if it weren't for what I call Te[illegible] tiniest and most beneficial livestock, we wouldn't have half the food that we do on our tables."

As to questions concerning her future, Cindy replies:

"Sure I hope to run for the title of American Honey Queen in 1987. But for now I am primarily concerned with promoting honey in my home state of Texas. Doing a good job gives me the greatest satisfaction, because I'm not in this for the glory. I just want to share with everyone the happiness that can be obtained as a hobby beekeeper."

"No matter how old I get, I'll always be a beekeeper," Cindy said. Then she added with a smile, "I guess you could say that I have honey running through my veins".□



Wood and Plastic

Wood has been used in a variety of ways in food handling equipment ranging from paddles to tubs. However, it is widely recognized today that even the most close grained wood cannot be cleaned perfectly and may harbor harmful or noxious microbes.

Plastics are the newest of the food packaging and processing materials. There are many reasons for their popularity in packaging including their light weight and the fact that they are less likely to break. There are a great variety of plastics on the market all with varying properties. I hope to report on these for use in the honey industry at a later date.

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Bee Talk

By RICHARD TAYLOR
R.D. 3
Trumansburg, NY 14886

June is the month when the life around us suddenly seems to succeed. It snowed in late April, and even through May, nature seemed to be struggling. The bees worked desperately to enlarge their colony, to the point where they could survive and cast swarms, and by June they were ready. Only a few days ago, it seems, the trees were just budding, and it appeared as if summer would enter casually. But then with a rush spring was over, and summer was unmistakably here. Gone are the trilium, columbines, violets and hepaticas of spring, replaced by the clovers, mustard and sumacs that promise honey in the combs. To me the seasons have always seemed to mirror the stages of life, June corresponding to the onset of maturity, and autumn to its fulfillments.

My colonies all got through winter all right. They always do. In fact they came through good and strong, sustained by last season's fall flow. There were just three hives that seemed a bit lighter than I thought they should be, so I gave these three each a gallon of sugar syrup, something I rarely have to do. But these three were in a new apiary I set up last year on the brow of a hill, and I did not realize at the time that the winter winds were going to sweep right up that hill and put a rather severe stress on the dozen or so colonies I've got there. Still, those hives were so heavy in the fall that all except those three came through strong as ever, and even those three were in pretty good shape.

What are you going to do about Swarming?

Swarms keep beekeepers in a constant state of anxiety in June. Beekeepers do not mind much having their colonies weakened by the stress of winter, but they dread having them weakened by swarming, even though the effect is, in either case, about the same. And of course swarms do produce a special kind of frustration. Just when you think you have things pretty well under control, you go to your apiary and there is a monster swarm on a branch. And it is not always easy to figure out which hive it came from. Sometimes you can tell by looking into the supers. If you find supers that are pretty well filling up with honey but have very few bees in them, then you can be quite sure that that colony has swarmed.

You can use a swarm to great advantage, if you know for sure which hive it came from. Just move that hive off to one side and hive your swarm on that original stand. The bees will be very unlikely to swarm again, and they will make a huge crop for you.

But of course you would like to discourage swarming if you can. I speak of discouraging swarming, rather than preventing it, because I think of no really effective method of total prevention which is not more trouble than it is worth. You can give the bees more room, and that might help some, but don't count on it. And you can "reverse", that is, put the bottom story on top and the top story on the bottom, but don't count on that either. And you can keep young queens in all your hives. That will go a long way towards discouraging swarming, but it is a lot of work and expense. My friend Elbert Jaycox says it is worth it, but another friend, Charles Mraz says it is not, so you have to decide for yourself. Or, you can go through your hives every week and destroy queen cells. After about three weeks of that you'll be so fed up you won't ever want to see the inside of a hive again, the bees will be too demoralized to make a crop, and some of them will go ahead and swarm anyway, even before the queen cells are capped and before you have a chance to get them destroyed.

Effective Discouragement . . .

Effective swarm control measures involve dividing the colony, in one way or another. Some beekeepers just split nucs out of colonies they think might swarm. That is my system. It is quick, easy, and fairly effective. But you have to have something to do with the nucs. You can put six three-frame nucs together in a two-story hive, thereby dealing with six colonies and increasing your apiary by only one. Or sometimes you can sell the nucs. Another good system is just to divide a swarmish colony into two halves, leaving the upper half, which has most of the honey and usually the queen, on the original stand, setting the lower half down beside it with a new bottom and cover and letting this half hatch out a new queen and get her mated. Later in the summer you can reunite the two halves, which results in a very powerful colony for gathering the fall nectar flows. That works pretty well, but it requires extra bottom boards and covers.

Gathering Stray Swarms . . .

There is also the pleasant task of gathering stray swarms. After a half century of this I still get a thrill from learning of a stray swarm, and I'll drive quite a ways to get one, whether I need it or not. Here is where you need a swarm gathering box, which is nothing but an old hive body with heavy screen tacked to one side and a hinged screen on the other. You just open this up, get it under the swarm, and shake the bees off into it. Close the hinged side and leave it there, overnight if you want to, and the bees that didn't get shaken in will be found clinging to the outside. Or you can make a big hole in one side of the hive body and shake the bees into your swarm gathering box through a huge funnel. I've got such a funnel which I've used for years. I think the neck is about four inches across. Once the bees, or most of them, are in the swarm gathering box, you can cart them off wherever you like.

I take a tour around to my bee yards almost every day from late May through June, scrutinizing all the bushes to see whether I have had any swarms. I'm apt to find one when I least expect it. The entire tour is about ten miles, so during the month of June I put close to three hundred miles on my little truck, mostly checking for swarms. That is not very cost efficient, but I enjoy it and it gives me an excuse to be in my bee

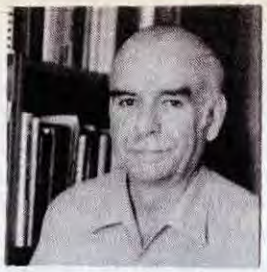
Continued Next Page

TAYLOR . . .
yards. And, of course, I find plenty of other things to do there too. I have to go through the village to get to one of the yards, which means I can pick up a few groceries or whatever, and on the way back I can check some of my bluebird houses that hang on the telephone poles along the road. I certainly do not consider it time wasted.

(Questions and comments are welcomed. Please enclose a stamped envelope.)□

The Bee Specialist

by ELBERT R. JAYCOX
5775 Jornada Road North
Las Cruces, NM 88001



Catchword: Genetics

As our problems with mites continue, and the African bee looms closer on the horizon, we hear more and more that genetics, the science and study of heredity, is our salvation. Actually, faith that genetics will save us goes back at least to 1972 when Dr. C.C. Michener said that " . . . control through genetic barriers can offer the best means of stopping the northward migration of the undesirable African bee." Unfortunately, the idea was not pursued, so Dr. Norman Gary and his colleagues are now advising that we begin, as soon as possible, " . . . a 'crash' genetics research program on honey bees." This makes you wonder what happened to previous research. Dr. Gary noted in 1971 that "Experiments relating to most of the following control strategies (for African bees) have been conducted at our laboratory during the past few years or are currently underway."

Expectations of what one geneticist will be able to do in California are very high. According to reports from there by Tim Lawrence and Susan Cobey and Dr. Eric Mussen, the geneticist they want will look for long-term solutions to the African bee problem through studies of genetics, reproductive physiology, and management strategies. He will be expected to study resistance to parasitic mites at the same time, and should be able also to consider the inheritance of disease resistance, pollen preference, longevity and pesticide tolerance, according to one report. The list is long enough to frighten even the most confident young research geneticist.

What have we gained from previous genetic studies on honey bees in the United States? According to Dr. Orley Taylor, much of the USDA-sponsored research on African bees since 1974 has focused on basic rather than applied biology, and applied research is desperately needed now.

In other institutions, genetic studies unrelated to African bees have also given us a great deal of basic knowledge, but not usually results with an applied impact. The landmark studies by Dr. Walter Rothenbuhler, over many years, lead the way in the analysis of behavior in relation to disease resistance in honey bees. That knowledge is being applied by Steve Tabor in breeding bees with traits for resistance in his commercial stock. Dr. Rothenbuhler's work is, perhaps, the best example of "success" among genetic studies of honey bees.

Other fine studies, which provided plenty of basic knowledge, include that of Dr. Harry Laidlaw, Dr. Otto Mackensen and W.P. Nye, and Dr. Bud Cale. Unfortunately, for a variety of reasons, the application of their contributions to applied beekeeping largely fell on hard times except for the Starline and Midnite lines of bees.

One important piece of genetic work apparently was never done, or at least never completed. The USDA geneticists promised us they would produce and maintain a "standard" bee to which all others could be compared in behavioral and production studies. This needed contribution got lost somewhere.

If you were to rate our past success in providing applied benefits from genetic research, you would have to give it a low mark. Also, none of the work was done quickly. This does not bode well for studies on African bees made under duress and "crash" conditions with unrealistic expectations.

Are there some alternatives to genetic studies, or supplemental action, we should be considering? Dr. Orley Taylor reports that suppression of the African bees by killing swarms and wild colonies when they reach Mexico would reduce the rate of spread and allow more crossing of European bees with the Africans. However, Taylor suggests that such measures would be less suitable in Mexico than in the U.S. where he expects the density of wild colonies per square mile will be lower than in Mexico. The only example of "success" with such tactics appears to be on the island of Trinidad. It took about five years for bee stocks there to become Africanized versus 1.5 to 2.5 years in Venezuela, according to Taylor. He believes that killing swarms and wild colonies of African bees at Brownsville, Texas and west of Nogales, Arizona " . . . could slow the spread of African bees and could provide the time and experience needed to develop a number of alternative approaches." You have to credit Dr. Taylor with boundless optimism when he thinks we will make any progress in a year or two with the bees already at our southern border. Almost in the same breath and in the same article he writes: "Crisis management of the African bee problem has failed in Latin America and is likely to be costly, inefficient and ineffective in the United States as well." Amen.

We are overlooking two opportunities in relation to our knowledge and control of African bees. One is a study of the African honey bees already ***within*** Mexico. Drs. Richard Nunamaker and Bill Wilson found them there, south of Mexico City, on one of their collecting trips in that country. Dr. Nicola Bradbear in England wrote in a 1984 paper that " . . . in countries such as Mexico and Brazil where these (Africanized) bees have been present for some time, beekeepers have learned to manage them successfully, and higher yields of honey are obtained than with the European bees, because the bees are more vigorous and better adapted to the environment." Here is an ideal opportunity for some biological detective work by the USDA together with their Mexican counterparts. Let's learn, by using all reliable identification methods, just where the center of introduction was

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located and to what degree and distance the African genes (characteristics) have spread in the population of Mexican honey bee colonies. Concurrently, we should try to learn by interviews with Mexican beekeepers and with queen breeders in South Africa and South America what stock came into Mexico, at what dates, and from where. This project should begin as soon as possible. Funding for such a project would be of greater value than just for the routine monitoring of the characteristics of European bees before and after an invasion of African bees, which is often proposed. In this case, we have a chance to learn, as we did not in California, what happens when African stock is introduced into the center of a country populated only with European bees and with environmental conditions suitable for its spread.

The other opportunity is to take advantage of the breeding and selection project for strains of African bees in the Republic of South Africa. They have been using instrumental insemination and isolated apiaries on Robben Island in their work, and it was still in progress in 1984 according to M.F. Johannsmeier in Pretoria. Dr. R.H. Anderson, also of South Africa, said in 1981 that they could not use the standard test for aggression on the departmental stock because instead of stinging the bouncing leather ball, the bees just took a joy ride on it. If we were to use and further select such stock, we would save years of work by our hard-pressed geneticists. Depending on the nature of the African bees already in Mexico, we might be able to do some test introductions of this selected stock and then monitor its effect. For about $5,000 in transportation and expenses we could learn quickly whether this idea has any merit. It could cost $1.2 million to learn whether selection for drone mating times could help solve the African bee problem.

Based on our experience with the introduction of tracheal mites, the greatest problem facing beekeepers when African bees appear will be the quarantines and other regulatory measures. This is ironic because one of the primary reasons cited by Dr. Orley Taylor for the turnabout and recovery of beekeeping in southern Brazil is "increased migratory beekeeping". Migratory beekeeping in the U.S. may not survive the tracheal mites; it will surely be dead on arrival of the African bees.

Heat and Honey Productio

June is a hot month in many areas of the United States and a good time to consider some effects of heat on honey production and handling. In New Mexico and other areas of the Southwest, some beekeepers manage their colonies in too few boxes during honey flows in hot weather. This means that they may take honey by the frame instead of by the box or super. In addition, it means that unless their bees are shaded, at least in the afternoon, the bees have to spend much of their time and energy carrying water and fanning to cool their hive to the detriment of foraging for nectar. Supers of comb play several roles in the life and behavior of the colony of bees. The extra empty combs provide space for adult bees and for incoming nectar, which is high in water content and takes more space when first collected than after being processed. Colonies with insufficient supers "hang out", cluster outside the entrance, but will usually cease

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to do so when you add even a single shallow super.

Empty combs provide stimulation for bees to collect nectar. When you give bees the supers they need, you gain production from the stimulation as well as from the space that allows the colony to function more efficiently. Back to the idea of heat and honey production, supers provide extra insulation on top of the colony and are of great value in overcoming the effects of lack of shade in hot climates. The bees do not have to be located in a southwestern desert to benefit. Bill Nye studied the effects of extra supers and shading on bees in the Howell Valley of Utah where maximum temperatures are generally around 95°F (35°C). Liberal supering increased honey production by 25 pounds per colony.

Heat is an important consideration after your honey is harvested. Use as little as possible during processing. It is in the storage of the raw product where many beekeepers in hot areas make their greatest mistake. They put their drums or cans of honey in uninsulated, uncooled storage areas where the honey literally cooks as if it were in a slow cooker in the kitchen. That heat is just as damaging as applying a flame to the containers. Even moderate heating changes the flavor and chemical makeup of the honey.

To add insult to injury, some beekeepers leave heating units turned on continually in their small tanks used to sell honey at their homes and honey houses.

If we are to overcome our serious marketing problems, we need to produce the best-tasting and wholesome honey possible. We may criticize honey labels that say "uncooked honey" on them, when at the same time we are actually cooking our own honey in processing, storing, and selling it. When the days get hotter, be sure your honey is staying as cool as possible, wherever it is.□

The Colony in The Bee Tree

By JOHN BOLF
4710 Carman Drive
Lake Oswego, Oregon 97034

I had gone along this path many times before without seeing them. Perhaps because the washing of the hurrying waters over the shallows below the cliff distracted my attention from the immediate surroundings.

Today the sun was shining full upon the snag in an opening of smaller fir trees out from the path. The sun's rays sparkled on the wings of large numbers of insects flying above the clumps of blackberry vines by the broken tree. They appeared like chaff dancing in the breeze.

Curiosity prompted me to investigate, and I circled to the other side of the vines to the snag, at the base of which appeared to be their focal point of activity. It was a tree that at one time had been broken off thirty feet above the ground by strong winds. It now stood alone, despoiled of its stateliness and stripped of its honored rank among neighboring trees, gradually surrendering to the decay which is nature's ultimate claim. Yet, offering itself gracefully to benefit whatever life came to be served ere it crumbled away and returned to the soil.

I followed the flight origin of those strangers with my eyes down through the thickets and then discovered an opening in the trunk less than two feet above the ground. The aperture was as long as my hand and three fingers wide at its broadest. They were honey bees; and they were bustling with activity. I pushed aside some of the stalks to get a better view, and then I could see old wax combs inside. They were stained dark with propolis and age.

The insects flights were encumbered by the tangles of growth through which they had to pass. With a pocket knife I cut some of this away and the sun reached down to give them light and warmth. For a few moments I watched, studied. I picked out a single bee as it emerged from inside, saw it hesitate a moment, then dart up through the new clearing, losing itself immediately in the summer sun. I also watched those coming in. Many were laden with bright yellow pollen, and all were excited with their findings. Watching them in their flights I marveled how they could fly so swiftly and in such numbers and never collide.

I made frequent visits to the snag in the opening of the trees, and there I spent quiet moments with my new bees. They were the busiest of creatures, valuing every precious moment. There were myriads of blossoms in natures' gardens and farmers' fields. The honey makers could not let such treasures go to waste. In my mind I could visualize huge combs being filled with rich, golden honey.

I never considered taking the honey, though. To do so would be to destroy the bees and their shelter with them. It didn't seem proper that I should plunder the fruits of other's needs. Nor did I want to transfer them into a modern hive. Many would inevitably be killed in the operation. Since they were doing so well I would permit nothing to disturb their peace.

My introduction into the wonders of the bee world came one June day when I discovered a swarm of bees in a small apple tree behind our house. I had never seen a swarm before, and didn't recognize this as such until I almost walked into it. Some bees were flying around and they alerted me to the dark live cluster clinging to a limb. I became alarmed, apprehensive, puzzled and awed. I wondered what to do. Then I remembered that Mr. Smith who lived on the adjoining farm owned a half dozen hives. I decided the swarm must be his.

I went to his place and found him in the garden by the wood shed. He picked up an empty hive and we went to take in the stray bees. He studied them closely, seemed satisfied, but made no comment. He sat the hive on the ground near the tree and spread newspapers in front of it, and suggested that I get a dish pan from the house. When I got back he had the smoker going. I asked what the smoke was for and he said that if the bees got mean the smoke would clam them down. Suddenly I wanted to be any place but here. Mr. Smith gave me his bee veil saying that he wouldn't need it. I hesitated, thinking that he should use it and I could watch from a distance. But he helped me put it on. I thought that he was sacrificing himself to do me a favor. He didn't have gloves and I was willing to get stings in my hands because he was willing to expose his face to save mine.

I held the dish pan under the cluster, as he had suggested, and he gave the branch a sharp shake. The bees dropped into the waiting vessel like wheat kernels from a pail tipped bottom up. The sudden increase of weight caused me to almost lose my grip on the rim. Some of them started flying around but didn't seem angered. They appeared puzzled rather than malicious. Mr. Smith told me to empty them onto the newspaper in front of the hive, so I tipped the pan over and they all dropped out in a body. I expected them to erupt into a whirlwind of angry insects, but was surprised how they kept together in a gently yielding mass. All the time Mr. Smith was working with ease and confidence.

We got down on our hands and knees and watched the swarm creeping into

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. . . despoiled of its stateliness and stripped of its honored rank among neighboring trees, gradually surrendering to the decay which is nature's ultimate claim.

Preserving Your Equipment — II

The better your wooden equipment is able to withstand the rigors of outdoor living the longer it will continue to serve you. The importance of appearance becomes secondary when length of service is considered, so no matter how your equipment will ultimately appear, by following a few preservation hints, you can increase its service. With equipment costs increasing and honey and wax prices remaining low the bottom line becomes 'getting the most for your hard-earned dollar'.

Last month we discussed several commercially available wood preservatives that were tested on beekeeping equipment. The chemicals used included ***chromated copper arsenate, acid copper chromate, pentachlorophenol, tributyl tin oxide, copper-8-quinolinolate, copper naphthenate*** and a ***water repellent.***

The results indicated that of the chemicals tested, only the ***water repellent, copper naphthenate, copper-8-quinolinolate*** and ***acid copper chromate*** were safe for use. The remaining chemicals caused several problems including: acute bee kill, chronic bee kill, overwintering difficulties and contaminated honey and wax. These problems were significant enough to warn people against using them. The conclusion was that if you are going to use a wood preservative, use either those recommended or others already proven safe.

But what commercially available products contain only those recommended chemicals, how expensive are they and how do they compare to other methods of preserving your bee equipment? Let's compare painting to these other methods — both in terms of preservation ability and initial long-term cost.

Commercial Products . . .

Of the 3 commercial products recommended, the easiest to obtain is copper naphthenate. This is a subjective opinion based on the following observations. First, in the 7 stores I checked here in Ohio, only 5 had copper napthenate and none had copper-8-quinolinolate or acid copper chromate. Next, if you do have all 3 available in your area, the cost of acid copper chromate may make it prohibitive to use on this type of equipment. Of the remaining 2 chemicals, copper napthenate provides a little better insecticidal protection than copper-8-quinolinolate. This is both a good and bad point. Since these chemicals are insecticidal in nature, if even only slightly, you are exposing your bees to a constant, low-level poison.

There is a commercial compound available that contains copper-8-quinolinolate. It is available through a mail-order company in New Jersey and they can be reached by calling the number listed at the end of this article. This compound has been registered for use on beekeeping equipment by the FDA and EPA.

So, where does this leave us? If we take a close look at the water repellent used in the original experiment, the result is that it was not very effective — as used. This repellent was composed of a mixture of parafin, varnish and a mineral spirit solvent. The ratios of these ingredients was 1 oz: 1½ cups: 14 cups. It is commercially available but it claims only repellent, not preservative qualities.

However, a similar mixture that can be made at home does have increased repelling qualities and is easy to make and apply. This mixture is composed of melted parafin, boiled linseed oil or exterior varnish and turpentine. The ratios change to the following — 6 oz. parafin, 3 cups boiled linseed oil or exterior grade varnish, 12 cups turpentine. The increased repelling quality of this mixture is due to the increased amount of parafin. Equipment can be either dipped or painted, should be air dryed for 2-4 days and will last about 2 or 3 years before deterioration is evident. This mixture costs about $13/gallon and will treat about 100 square feet of unfinished wood surface.

The commercial product containing copper-8-quinolinolate costs about $21 /gallon and will treat roughly 150 sq. ft. of surface. This comes to $14/100 sq. ft. if brushed and about twice that if dipped. The treatment will last from 4-8 years without retreatment, and need not be painted for additional protection. It leaves a clear, non-colored finish.

Two or 3 years isn't a long time when considering beekeeping equipment. Ten years is optimal, with only 2 treatments — the initial and a touch up a few years later.

Continued on Page 309

Paint goes a long way in preserving wood by slowing the migration of water into the wood. The key word here is slow — not stop.

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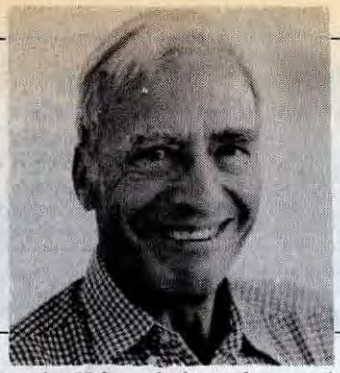

There are very few, if any beekeepers that remember Andre Prost, a honey dealer in New York City some 50 years ago. Mr. Prost was no ordinary honey dealer though, he was an unusual man that dealt in unusual honey. More than anyone, he appreciated the tremendous differences in flavors of honey from all over the world. To him, the flavors of honey were more interesting and dramatic than the flavors of different wines. What beekeepers need is another Andre Prost.

We think Vermont Clover honey from the Champlain Valley is something special but in every part of the world there are special honeys different from all others. Unfortunately, most honey sold today completely ignores flavor and fragrance, as it is mostly sold by color, which has little to do with flavor.

Back in the 1920's when I first started commercial beekeeping, in the Finger Lake Buckwheat area, I learned well-ripened, heavy bodied buckwheat honey is one of the nicest flavored honeys there is. Unfortunately, much of it was extracted "green" in those days, before it was ripened and sealed over. No honey tastes as bad as green buckwheat honey when it starts fermenting and blows up, as it often did. On occasion we would get milkweed honey. It is one of the most fragrant, delicious flavored honeys there is, but a combination of milkweed and raspberry honey is even better. This was produced at one time in Michigan and parts of Maine. Rarely can one find this honey in a pure state. It is usually mixed in with other honey and the exquisite flavor is lost.

In 1971 we took a trip thru Georgia in the USSR. On one of our beekeeping tours we were served a pancake supper with crystalized honey in champagne glasses. This was the most delicious honey I have ever tasted. They told me it was acacia honey that many countries Central Europe produce, apparently from the black locust imported from the U.S. and planted extensively in Europe.

Some outstanding honeys come from Spain and France, such as Rosemary Lavender and several others. If they can be had pure and well ripened to bring out the best flavor, there is no finer honey. It is not easy to find such honey every year.

I have spent many years working with beekeepers in many parts of Mexico. I believe Mexico has more kinds of delicious honeys than any country in the world, particularly from the Yucatan. A most "exotic" honey from there is called ***"Dzi-Dzl-che"***, if you can pronounce this Mayan word. When you taste this pure, well ripened honey you can imagine yourself on a tropical beach, among fragrant flowers, soft music and palm trees waving in the warm tropical air. To be sure, very few people have ever tasted pure ***"Dzi-Dzl-che"*** honey. Most of it is extracted green and dumped into used barrels with no protective lining and mixed with other less desireable honey. It is often left cooking in the sun for months until it is ruined. By that time you have that "cheap foreign" honey that U.S. beekeepers complain about.

Central Mexico gets a beautiful golden crystalized honey. It is smooth as butter, has delicious flavor and is called ***Acahual*** honey. Germany buys all the ***Acahual*** honey, none ever gets to the U.S. Western Mexico and Central America have that beautiful ***Campanilla*** honey, from a blossom like a purple morning glory. It is mild and light colored, but heavy bodied with a smooth, delicious flavor. It never crystalizes. It reminds me of ***Tupelo*** honey from Western Florida. Some of the finest pure orange honey comes from Northeast Mexico in the Nuevo Leon area. It has a fragrance of orange blossom that is hard to beat.

It is too bad someone cannot collect these unusual types and specialize in packing and distributing them. It would be a tough job. The only way to get some of these exotic honeys from Yucatan is to personally go there and supervise its production and shipping. In many other areas in Mexico there are good beekeepers, where you can get unusual honey without personal supervision. It would probably cost more to do this than you could ever get out of it.

• • • •

The article by John Bruce, "Adventures in Bee Inspection", on page 178 of the April GLEANINGS brings back memories of the early days of apple production in the Eastern USA. It is hard to believe that 60 years ago, when large apple orchards were first being planted, almost nothing was known about cross pollination for apples. Growers would plant solid blocks of one variety of apple, such as MacIntosh, and then wonder why they did not get any apples. Most orchards were planted with only one variety. Interplanting of pollinators was not yet heard of. Many orchards went broke before they learned how much cross pollination meant to produce a paying crop of apples.

In 1928, when I first came to Vermont there was a large orchard in Eastern Vermont near Windsor. It never produced a paying crop of apples though the trees were at their peak bearing age. We moved in about 50 hives of bees that spring. The following fall I visited the orchard and the trees were so loaded with apples that the limbs had to be propped to prevent their breaking. Also, in those days apples were worth money. As I recall, something like $24 1928 dollars a barrel (about 3 bushels). That's nearly $30.00 a bushel today.

About 20 years ago in Mexico a beekeeper I worked with was one of the first growers to plant grafted avocados ***aquacates injercitos)***. Before that, most Avocado trees in Mexico were seedlings with all varieties of Avocados mixed in and no pollination problems. Trees were sent to California where superior avocado fruit was selected and grafted. Trees were grown for the first time from the best varieties. Enrique Gilly, in Mexico, had about 14,000 grafted trees, almost all of only one variety, the ***"Fuerte"*** Avocado. He had beautiful, large, healthy trees, but little fruit. Some big trees had only six or a dozen Avocados, certainly a losing business.

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I questioned Enrique about cross-pollination for Avocados and he admitted he did not know anything about it. He corresponded with friends in California and learned Avocado did indeed need cross pollination. When other avocados such as Haas, Bacon and other varieties were interplanted, his crop really began to climb. Avocado pollination, I found, was more complicated than apples. The blossoms produce only a small amount of dark honey and are not specially attractive to bees, though they will work them. Also, the blossoms produce a very small amount of pollen that matures at all different times of the day. Avocado has become a common fruit in the U.S. What is a salad without avocado? They really make a salad something special.

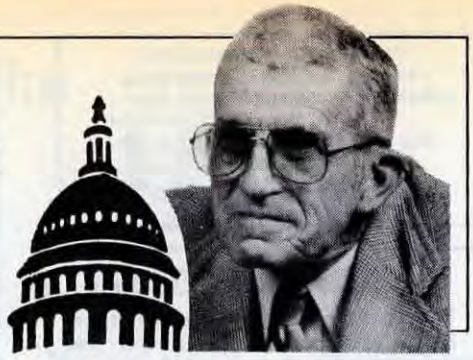
Also from the April issue, I can appreciate Arnold Krochmal's article. Promoting beekeeping in third world countries is not easy. Most of these people have little experience and less money to do more than have a few "Wild Hives" near the house. Many efforts have been made in Mexico to promote beekeeping but rarely has it been successful. It will take continued years of teaching and experience before this project takes off.

I consider Research Review by Roger Morse to be one of the best features of GLEANINGS. I have known and worked with Roger for over 30 years. He has a life-long experience in Beekeeping and can well adapt his scientific training to practical beekeeping.

I appreciate why Roger cannot understand why there is so little American Foul Brood in Argentina and Brazil. I have found this to be true in much of Mexico, especially in Yucatan. I have found colonies of AFB in Yucatan, verified by USDA tests, yet it never seems to spread. They have EFB and paralysis, but almost no AFB. I remember finding AFB in a yard of about 100 colonies. We expected to find a lot of it the following year because hives would die out with it and combs were being swapped all the time. Yet I found very few hives with AFB the next year even though nothing was done to prevent it from spreading. Most interesting is that there appears to be resistance to Varroa with the Africanized bees according to Roger. That there is resistance to Varroa mite in bees cannot be questioned. If there never was any resistance, Varroa would have probably wiped the honey bee from the face of the earth. Civilization may come and go but the bees will always be.□

The Washington Scene

By GLENN GIBSON
Minco, Oklahoma



FREE TRADE???

Doing a bit of homework on international trading, I have learned a little about the slow but sure route that got us into this so-called "free trade" mess. The little I have learned has whetted my appetite and this presents a problem during my research because I take note of favorable points and overlook some information that would tend to dispute my biased views. I do this in spite of a strong desire to keep an open mind.

The biggest mistake one could make on the subject is to label the free trade buffs as a pack of unpatriotic idiots and scoundrels. With these points in mind, I will unload some of my thoughts during the early stages of my research.

International crises have dominated the news these last few weeks; but in spite of this a number of insertions on free trade have been made in the Congressional Record. I have clipped some of these that brush our problem. The titles are:

- January 28 — Romania's Trade Problems
- January 29 — Free Trade, Fair Trade or No Trade
- January 29 — Protect Us From Pessimists (Protectionists)
- February 6 — Dispelling The Trade Myths
- February 18 — President's Steel Program Falls Short
- February 19 — Trade Outlook (Need corrective legislation)
- February 24 — The Free Trade Hoax
- February 25 — S. 3099 (Amends section 201 of the Trade Act of 1974)
- February 28 — The January Trade Deficit
- February 28 — China May Challenge U.S. Agricultural Exports
- March 6 — Roth (Senator) Seeks To Counter Protectionist Pressures
- March 12 — The Runaway Trade Deficit
- March 12 — Foreign Trade Practices Act (Eliminates ambiguities)
- March 12 — We Need A Cabinet-Level Department of Trade
- March 18 — Imports Pose Danger to National Security
- March 18 — Market Access Barriers To U.S. Soda Ash Exports
- March 19 — New Zealand Grain Sales In The U.S.
- March 19 — The Importance Of Trade With China
- March 20 — Protection Is An Abuse Of Patriotism

This may not be all of the insertions on trade since I may have overlooked a few. Collectively, these give us a hint of the tone and content of future debates. Also, they raised more questions than answers. Consequently, I contacted the local library for a copy of Adam Smith's book — THE WEALTH OF NATIONS, published in 1776. Smith (1723-1790) was a noted English economist who was a strong advocate of free trade. He believed that if government abstained from interfering with free competition, industrial problems would work themselves out and the practical maximum of efficiency would be reached. This same doctrine applied to international relations and Smith's discussion of it is the classical statement of the argument for free trade. The ideological basis of our free trade system seems to be an off-shoot of the Smith doctrine.

However, disciples of Smith have failed to note or stress that he favored retaliation and protection for industries during national emergencies.

Another noted English economist, David Ricardo (1772-1823), wrote extensively on the subject of free trade. He set forth the basic case for free trade; namely, that it is to the advantage of nations to specialize in the production of goods and services with which they are relatively efficient and to import from other nations goods and services with which they are relatively inefficient. By adherence to this so-called law of comparative advantage, he said, nations could better attain a higher level of real income and consumption than they could by acting in isolation. Ricardo's system would require each producer of goods and services in the world to compete with all other producers in the world without intervention by his own or any other government.

Today's international honey trading is a good example of how the Smith-Ricardo doctrine works. Our free trade policy for honey gives full recognition to Ricardo's law of comparative advantage. For example, the Chinese beekeepers are not efficient but their government-industry partnership permits them to make national interest deals. Also, a close look at our general trade policy reveals a great deal of the Smith philosophy. Other countries we call trading partners seem to completely ignore the Smith-Ricardo doctrine on every count where our U.S. policy is apparently directed to pleading and hoping that other countries will respond to our pleas for fair trade. Our U.S. trade deficit tells us that they ain't gonna doer. Rube Goldberg could have written a better program.

Honey trading figures for 1985 tell a sorry story. The 1985 production is estimated to be 150 million pounds. Imports totaled 138.2 million pounds valued at $45.5 million, but exports were 6.5 million pounds valued at $4.1 million. Takeover April 1 will be slightly over 100 million pounds. And the Government spends $90 million on giveaway honey. I doubt that it is possible for our markets to get in a worse mess. Who seems to be deeply concerned? Very few in government. For all practical purposes these figures tell us that foreign producers (efficient or no) have completely captured our market with the full blesssing of the free-trading Department of Agriculture. This agency was supported by a majority of the Senate and a great percentage of the House.

The 1985 Figures

For more than thirty years, I have always used the pollination value of the honey bee as sound justification for requests either in Congress or the Administration. This worked quite well before the Block period; but nowadays, thanks to the GAO, the Honey Back Grounder, and a volume of letters from the Department of Agriculture, we can no longer depend on this as a point in our favor. A number in both Houses now feel that the pollination story has been over-blown. Loss of the commercial beekeeper is not serious, they say, since the problem can be handled by the farmer owning his own bees or the beekeeper can raise his pollination fees.

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I get a kick out of noting that free-trading Block put a black crepe on our door in 1982. How come he waited 4 years to do battle? I think we could have won a round then and the government would have saved a half-billion (totaling what has been spent and what will be spent on funding the old program through 1986). Again, I say, our first order of business is to clear up the pollination story.

Even after the pollination story is clarified, I doubt that free-traders who think their food comes from Safeway will support us. I have no crystal ball that will tell me when shortages of food would develop that would be caused from a shortage of honey bees for pollination. Pure free traders will likely tell us how nice it is for us to be able to buy apples from Western Europe and at this distant point I am guessing that the Trade Negotiator will still be pleading with our trading partners to lower the duty on incoming honey. Or, making a "tail-between legs trip to Tokyo" making the same plea. And free traders in Congress and the Administration will air their views about ways and means of getting tough with our trading partners. Some may venture a mild statement about GATT (Gentleman's Agreement To Talk) needing to be improved. And, so on ad nauseam.

How shall we cope with our problem? Follow the lead of the silent majority of beekeepers, or try to expand our influence into all states? The former is unthinkable and the latter will be difficult. We just can't set idly by while the Secretary of Agriculture and other free traders in Washington write us out of existence. This is a distinct possibility as long as the free traders have the upper hand in Washington. I am dreaming about the day that we can give Senator Boren the green light for special legislation that he feels will solve our problem (as he told the Senate last year). Before playing the Boren card, we must have wider support or the likes of Conte and Quayle would kill us.

Beekeepers, we need your support.□

Going For The Blue

By JAMES THOMPSON
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Spring time is the time you should be making plans for county and state fairs. Consistent winners are those that have prepared their entries well in advance. Yes, there is an occasional winner that just lucked out by entering a jar of honey or a frame of honey but the odds are against that happening if the fair is judged properly.

There are many types of entries that can be made in showing honey and this article will cover several of them.

Know Your Product . . .

First, one must understand the properties of honey. Honey is hydroscopic, has different colors, flavors, densities, generally contains two basic sugars, can granulate and ferment. ***Hydroscopic*** means that honey has the ability to take on moisture from the air. Honey in a container may absorb moisture from the atmosphere which will raise its moisture content. Most often the honey forms a "skin" and will absorb and lose moisture at a slower rate. It is even possible for honey to absorb moisture through a lid with a cardboard liner.

The coloring, flavors, and densities vary according to floral sources, soil conditions, and the growing season. Also, color can be determined by the degree that it absorbs light. Generally, honey colors range from a colorless liquid to a deep amber. It is possible to alter some colors by using the proper filter, but to change the color drastically one must dilute honey with water to the point that it is destroyed. Thus, honey cannot be lightened in color without damaging it. On the other side of the coin, honey can be darkened by heating it.

The flavors of honey vary with the floral source and there is no one that is "best". The darker honeys are generally stronger flavored and contain more minerals. However, a honey may be dark due to overheating and scorching. The judge tastes the honey looking for things that are controlled by the beekeeper such as scorching or beginning stages of fermentation.

Honeys in the United States pour slowly when cold and faster when warm. In England there is heather honey which doesn't pour at all, thus it is extracted by a press. The ability to flow is not an indication of density. ***Density*** is determined by the amount of moisture in the honey. Moisture is measured with a special hydrometer or a honey refractometer and should have a moisture content between 16.0% and 18.6%. Bees cap honey when the moisture content is approximately 18% thus any honey removed from the hive should be capped. The general rule is to remove a frame from the hive when it is 80% capped, but for show purposes you should use fully capped frames. The question about reducing the moisture content from 18% to 16% is often asked. Once honey is extracted, it is not economically feasible to remove moisture. It can be reduced before the honey is extracted by a method of passing warm air past the frame for a period of time. I have been told that 90° air passed through a super of frames can reduce the moisture 1% in a 24 hour period of time. A Michigan beekeeper has a special room where honey is cured for a week prior to extracting and can obtain a 15.2% moisture content. Too much moisture can result in fermentation.

The two basic ***sugars*** in honey are dextrose and levulose. These vary in amounts according to the floral source. Honeys containing only levulose such as California Sage and Tupelo do not granulate, while honeys like Goldenrod, that contain more dextrose, granulate rapidly. The key factors are the ratio between the dextrose and levulose and the ratio between dextrose and water. Honey that granulates gives up some of its moisture, making more water available to the rest of the honey in the container. It is possible for honey to ferment at this time due to the increased moisture content, even in a sealed container. One may retard granulation by heating honey to 145°F for 30 minutes to destroy the yeasts, but it may alter the aroma, flavor and color.

Fermentation is caused primarily by excessive moisture. It is important to keep honey in the liquid form, keep the moisture below 17%, and store it in a cool place (below 50°F).

A honey judge should use several pieces of testing equipment: a honey refractometer, a polariscope, a color comparator and a scale.

The refractometer is used to determine the moisture of the honey because the method of timing an air bubble has many variables and is not a measurement of density but of viscosity. The polariscope is a device that reveals all the evils within the container such as lint, bee parts, pollen, wax particles and granulation. The color comparator is used to check the color of the honey to see if it has been entered in the proper color group. The scale is used to weigh products that have a weight classification such as beeswax.

Know The Rules . . .

The different categories: Liquid Honey or Extracted Honey, Crystallized Honey, Comb Honey, Cut Comb Honey, Honey in Extracting Frames, Chunk Honey, Beeswax, Bees, Gift Package, and Booth Display will be covered in this article.

If you are interested in setting up categories for a fair in the Cooking area, you might consider the following: Honey Divinity, Honey Fudge, Honey Dropped Cookies, Honey Rolled Cookies, Honey Bar Cookies, Honey Nut Bread (Quick), Honey Bread (Yeast), Honey Chocolate Butter Cake, Honey Fruit Cake, Other Honey Cakes, Granola, Muffins, Home Canned Goods, Pies (Fruit, double crusted), and Pies (Single crust).

Liquid or Extracted Honey is usually divided into 3 or 4 groups, according to color. The key is cleanliness in the product and the jar. Most fairs require three or more jars so that the judge may check for uniformity of color, uniformity of filling and to eliminate the chance that the beekeeper was able to fill only one jar correctly. Be sure to select the correct number of show jars for the fair, and make sure they are the correct type,

Continued Next Page

(usually glass), as plastic containers give strange sights when viewed through a polariscope. ***Show jars should be free of air bubbles, scratches, or other imperfections.*** It may be necessary to look through several cases of jars until you find show containers, but when you do, keep them separate from all other jars and never sell them. Wash and scald the jars and allow them to drip dry, oven dry, or use a hair drier, but do not dry them with a towel as you will put an ***unbelievable*** amount of lint inside the jar. I find that a chamois works well. The honey should be strained through a nylon strain cloth (available from all bee supply companies) and allowed to settle for a day or so. The jars are then filled to the top rim and an old cap screwed on loosely. The filled jars are then placed in a warm place for another day or so to allow any air bubbles to rise to the top of the jar. Then spoon out the honey and air bubbles down to the neck ring in all jars, making sure that all are filled to the same level. Keep the old lid on the jar until you get to the fair. ***At the last moment***, remove the lid, clean the top of the jar of any discoloration and install a brand new lid that has no scratches or dents. The new jar lids with the plastic sealing ring are the best as they don't discolor and could possibly be used again. Do not put any marks or labels on the show jars or lids. Because you do not have access to a color comparator or a pfund color grader, you might consider entering your honey in two or three classes. That way the judge will determine if you are in the proper class. Some fairs allow the judge to move entries to the proper class while others do not.

Crystallized Honey has many names and thus there has been some confusion as to what it actually is. Some of the different names are: Crystallized Honey, Whipped Honey, Creamed Honey, and Granulated Honey. There are shows where honey is actually whipped into a white mass of air bubbles. This product looks nice when it is first displayed but a few hours or days later it begins to separate and then is not a pleasant sight. Crystallized honey should be made using the Dyce method where the finished product is soft enough to remove from the container, hard enough to hold the shape of the missing portion, but not so hard that you would tear up fresh bread trying to spread it. The color of the crystallized honey should be as white as possible, and if in a clear container should be uniform in color without streaks. The honey should have a good flavor and be free from course grains of granulation. You will probably have the best results by seeding the honey with a known quality crystallized honey, (or seed).

Comb Honey likewise comes in several styles. Usually it is broken down into two groups and these are broken into subgroups as to color. The first group is the basswood sections which could be the 4 ¼ x 4 ¼ or the 4 ¼ x 5 sections. The items to look for are completeness of filling and capping, white cappings, uniformity of honey throughout the section, uniformity of the sections (from one hive), straight-even comb, and a clean wood section. These sections are difficult to produce as it usually takes a good honey flow and special manipulations of the hive. A few hints are: use new, thin ply foundation in the sections and cover the basswood section with masking tape before installing in the super.

Some fairs include the round section honey with the basswood sections which is unfair because the round sections are easier to produce. There should be a separate class for round sections. Make sure to clean every speck of propolis from the rings and use new transparent covers on both sides. Freeze all comb honey before cleaning it up for sale or display to kill any wax moth eggs that might be present.

Cut Comb Honey should be displayed in a container where you can see both sides. The comb should be completely filled out and capped. The cappings should not be travel stained and as white as possible. The section should be cut straight and clean. The honey that would have dripped during the cutting should have been drained entirely, and the comb should fill the container completely. Some keep the frames in the freezer prior to cutting, cut the combs with a heated device and have designed a cutting template for the desired size.

Honey in Extraction Frames usually have two categories and have individual rules as to the type of foundation that can be used. Generally there is a deep frame class and a shallow frame class. The deep frame class includes frames 9 1/8" and larger and the shallow class includes frames 7 ¼" and less. You should look for a frame that is straight and even, filled out to the edges and capped, and not travel stained. Hold the frame to the light and look for a frame that has

only one floral source and no cells that have remnants of stored pollen. Pick a frame that gives the appearance of being new and started with new foundation last spring.

Chunk Honey is the combination of cut comb and extracted honey, in a jar. There are usually two classes, one for 1 pound containers and one for 2 ½ pound containers. The items that apply to both extracted and cut comb honey hold for this entry with the exception of draining the cut comb. The cut comb should be uniform in all the entries. The moisture of this type of exhibit is usually higher due to the two types of honey being combined. Since wide mouth one pound containers are becoming scarce you may have problems finding these. Develop a method in placing the combs in the jars. The best way seems to be, putting two face pieces into the jar and butt in pieces in between. If you try to miter the corners, you will find that you can get three of the four pieces in correctly and the fourth goes in with large gaps. When loading the small jars, a layering approach seems to work best. Since the comb floats in the honey you will not be able to spoon out honey down to the neck ring so the jar should be filled to the top.

Beeswax may be in several classes. Some shows have classes for fancy molded, carved, and chunk (with weight groups). There might be differences in the judging as some judges prefer one color over another. I prefer the lighter yellow colors because wax can be darkened by high temperatures, contact with various metals, hard water, or different chemicals, and mixing odd bits of

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The HONEY TIMES

Published By Miksha Honey Farms, Val Marie, Sask. Canada

DISTRIBUTED BY:

IT'S HONEY HARVEST TIME!

EACH YEAR AT about this time, a very unusual activity is taking place. A different sort of a farmer is harvesting a very different sort of a crop- honey! Harvesting honey remains a long and hard task for the professional beekeeper, requiring some 35 individual manual operations which take the fresh, sweet liquid out of the honeybee's home and into yours. When the major source of nectar producing flowers in an area are nearly finished blooming, the beekeeper will drive his truck out to the farm where the bees are situated. For the past months he has tended to their needs, giving them protection from the elements, new egg-laying queen bees to ensure their propagation, space for them to store the honey.

It is not especially easy to entice the bees to surrender their labour's reward! The beekeeper must choose from one of many different techniques to seperate the bees from the honey. If the weather is cool or cloudy, he may use a specially designed blower which has an engine powered fan that forces a jet of air at the box where the bees are clustered. WHISH! and they fly out, eventually to settle back into the bottom hive box which serves as their home bee-

STORAGE OF HONEY

Honey should not be refrigerated. This seems to be the greatest error made in storage of honey. Keep it in a moderately warm (room temperature) and dry cupboard and it will retain its flavour and freshness rather well. The worst things that can happen to honey are too

Miksha Honey Farms of Saskatchewan, Canada, is offering a newspaper style advertising circular which beekeepers can pass on to prospective customers. The four page paper is intended to be given away at farmer's markets, in grocery stores, and distributed by mail. It contains short "news stories" written in terms that the general public will understand — about flavors of honey, storing honey, guidelines for using honey, and how bees make honey. Also included are many interesting recipes.

In order to help promote honey consumption, Miksha's is making the flier available to beekeepers for exactly what they cost to print. The following prices include postage:

100 papers . . . . $ 5.94

300 papers $14.87

For one free copy, send SASE. To order (in multiples of 100 only) send name, address and remittance to Miksha Honey Farms, Box 22, Val Marie, Sask. SON 2TO.

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honey-lovers as it has a mild, pleasing flavour and blends well in any dish. Other light honeys include the clovers, fireweed, and basswood.

One fairly light honey which deserves a class of its own is orange blossom. Though the honey is mild and as nicely scented as the flower it came from, it has an extremely sweet taste. A real surprise!

The dark honeys come from a wide variety of sources. They are often produced from eucalyptus, the flowers of the cereal grain buskwheat, and goldenrod. The flavours are very pronounced, and real fans will generally eat it liquid, and by the spoonful.

In 1015 AD, a fire in the city of Meisses, Germany, was put out with mead (honey-wine) because of a lack of water.

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Inspite of the advice to keep honey out of the fridge, the very best place to keep honey for very long periods of time is in the DEEP FREEZE. If you purchase a large volume of liquid honey, you will be delighted to discover that it stays liquid, and just as fresh as the day you bought it in the freezer. Seal the container tightly, put it in, and when you remove it, wait about two days. It will go from solid rock-hard to runny honey!

Honey probably earned some of its mythical qualities in prehistoric times. Early man would sometimes find honeycombs which were rained upon and had partly fermented. This was man's first alcoholic beverage (now called mead) and is beleived to have been mankind's first mind-altering experience!

Like other forms of farming, keeping bees is a risky affair- cold weather, wet weather, dry weather, short growing seasons, all can reduce the amount of honey the bees may gather. But over the years, enough is harvested and an interesting occupation is enjoyed.

Where are All The Beekeepers?

By DR. JAMES TEW
The Agricultural Technical Institute
Wooster, Ohio 44691

As a young guy attending my small home-town church some years ago, I have memories of the minister's frustration at those parishioners who were habitually absent. I felt secure in my presence. I pitied those who were not there for certainly their ears were burning badly as the minister admonished them in absentia, to conduct themselves in a more responsible manner. I never knew if they got the message.

How can I now chastise you readers for the seemingly disinterested beekeepers, who we know are out there, but seldom participate in beekeeping meetings or assist our industry in other positive ways? Now it has always been a policy of mine to present the positive side in preference to the negative in any give beekeeping situation, and I am not deviating from the philosophy here. However, I'm sure that most of us have noticed the common trend toward smaller attendance at meetings and less interest in beekeeping at local functions. I feel that trend to be unfortunate, but not surprising. It seems that everything is cyclic. Nothing stays on top forever. Hardly seven years ago, for example, there was a Citizen's Band (CB) bonanza that was unprecedented in radio history. There seemed to be endless numbers of companies, all eager to manufacture and sell you a CB. Now there's only a few manufacturers that still produce the units and the demand has stabilized. Similar comments could be made concerning hootenannies, fountain pens, and 8mm home movie cameras. Even computers with all the promise they offer have lost some of their glitter as the market place became flooded with various machines. Most accepted techniques or procedures "wax and wane".

Beekeeping is subjected to all the stress that all other occupations or pastimes are exposed to. On one side, we as beekeepers must adapt to change or be consumed by it. On the other side, a lot of beekeeping's draw is its pastoralism. Beekeeping's past is a warm comforter that all of us enjoy wearing occasionally, but at the same time the excitement of change, of new answers to old questions demands consideration.

As beekeeping passes through this most current period of change, bear in mind that many other low periods have been recorded; and I'm sure there are more low points – between the high points – in beekeeping's future. I think such cycles are simply a way of life. Certainly, such depressions should elicit concern, but I don't recommend "doomsdaying".

> . . . everything is cyclic.
> Nothing stays on top forever.

An author once wrote that a weapon had been developed that certainly would spell the end for mankind. He went on to state that the end for all was very near. He was referring to the military "advancement" of the day – the cross bow. Thankfully, he was incorrect. The problems beekeeping faces today seem frightful to some. I must admit that I have no immediate, easy solutions for honey import problems, Africanized bees, predacious mites, or long-winded magazine columnists, but there are solutions and they will be developed. They always have been.

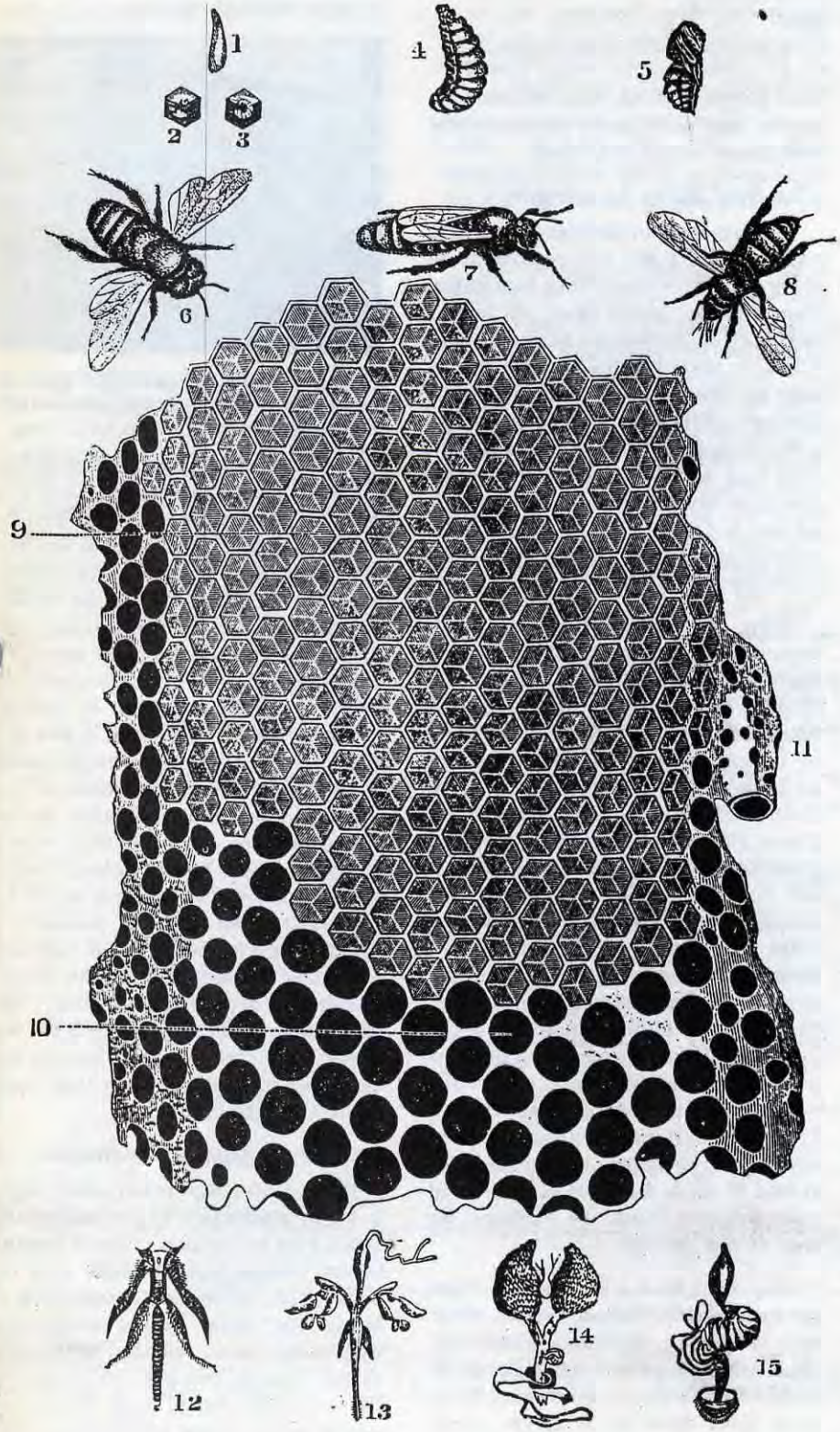
So what happens now? That has to be your question. Many of the superficial beekeepers have dropped the hobby and are off to other things. There's nothing new or wrong about that. It just means that those of us who are still happy in our pursuit and want to introduce others to beekeeping have our work before us. Even though bee organization numbers have declined, albeit not drastically, if one peruses the remainder of the group, it will be found that those remaining are the ones that are dependable and are committed to apiculture. What better group with which to work to get new people interested?

The group remaining reminds me of another experience that occurred in the early 70's. I recall watching beef producers herding their animals into pits where they were summarily shot and covered over with soil. At the time beef prices were so low that producers couldn't afford to ship animals to market. I asked a local prominent beef producer how he was able to survive such lean times with apparent impunity. He responded authoritatively that "when times are good, make plans for when they aren't". He had seen such cycles come and go many times. He felt that farmers that had not prepared themselves for the leaner times were the ones who were spectacularly destroying their herds. This analogy applies to beekeeping indirectly in that we are now working with many beekeepers that have seen slack times before and are not surprised by the problems that seem to be hopeless.

Bee specialists employed by some branch of state or federal government can do a lot, but not everything, for beekeeping. The potential audience must be there. That's where you beekeepers are so important; for it is your efforts that can encourage others to come to meetings or even become beekeepers. If state and local beekeeping groups keep striving to promote bees and beekeeping, consequently developing the potential audience, administrators will support USDA or university projects, and we will begin the process of working our way out of this current slump. I'm sure

everyone knows that services and facilities can always be reallocated.

Things have been better for beekeeping in other years, but things have been worse for beekeeping in other years too. We have a strong core group of beekeepers that will survive anything and are willing to accept the responsibility of constantly promoting and developing beekeeping. More than ever, I appreciate their drive and energy.□



Some History - or- Looking Back

By ARNOLD KROCHMAL

Before the U.S. Department of Agriculture Yearbook made its appearance, the Office of the Commissioner of Patents covered agriculture. Recently we acquired a copy of the report for the year 1857, one hundred twenty-nine years old.

Among the detailed illustrations of Chinese tea, hedge plants, llamas, and alpacas was this handsome detail of the honey bee.

To go with it there is a touchingly appreciative story of the importance of bees. A few extracts are given here. ". . . its uniform habits of industry and economy . . . afford a subject most truly instructive and sublime . . . being free from all selfishness and highly devoted to the promotion of their common welfare . . .".

The article goes on to tell of the economic benefits of beekeeping, noting that in 1857, Austria produced 66,000,000 pounds of honey and 6,600,000 pounds of wax, valued at $7,000,000, a gigantic sum in those days.

Detailed information on life cycles and bee anatomy are included, as well as hive structure and activities.□

PLATE	DESCRIPTION
Fig. 1	egg
Fig. 2	an egg as laid in the bottom of the ce
Fig. 3	young larva
Fig. 4	full-grown larva
Fig. 5	pupa
Fig. 6	a drone, or male (perfect insect)
Fig. 7	a queen (perfect insect)
Fig. 8	a neuter, or working bee
Fig. 9	cells of working bees
Fig. 10	cells of drones
Fig. 11	cell of a queen
Fig. 12	proboscis and mandibles
Fig. 13	the sting and its appendages
Fig. 14	the origerous tubes, spermatheca, and their appendages
Fig. 15	the honey-bag, crop, or sucking stoma and second stomach

The Queen Excluder

What It Will or Will Not Do

Steve Taber of TABER APIARIES
Vacaville, CA 95688

The queen excluder has been around a long time and people are still arguing about its use and misuse. According to the "History of Beekeeping" by G. P. Georghiou that appeared in 8 consecutive issues of ***GLEANINGS*** beginning in January 1955, Abbe Collins developed the first one in 1865 and in 1908 a commercially made one was on the market. A queen excluder is made with horizontal wires welded about 16/100 of an inch apart. A zinc or plastic sheet with perforations the same dimension can also be used. That sized opening permits workers to pass but prevents the passage of almost all queens and drones. All major bee supply dealers have these items for sale in various styles and designs.

A perforated zinc excluder (R) and an all-metal welded wire (L). Perforated zinc is cheap and all-wire is rugged, but both kill too many bees.

Excluders are used in commercial honey production and they are used by amateur beekeepers as well. I use them in some of my queen-rearing or cell-building colonies and many scientific or academic beekeepers have developed very specialized purposes for them. They can be useful. They can be a liability. They are expensive pieces of equipment which can be done without. This article is about what can and cannot be done with queen excluders and how to use or not use them.

The first thing to consider . . .

The first thing to consider is your bees and you. Don't use any equipment on them that will either kill or demoralize them without some kind of logical reason. The perforated excluders will kill more bees than the bound ones but they are cheaper. If you have to have a thousand of them, a dollar or two makes a big difference. I prefer to use the all-wire type bound by wood which gives a bee space under the box of combs placed over it. The all-wire, wood-bound excluder gives maximum access of the bees to combs above the excluder.

There are certain rules of thumb about what happens most of the time excluders are used, which I will review briefly. The review is brief because a scientific study has NEVER been made on the use of excluders. When putting on supers of foundation, always place them under the excluder immediately above the brood. Foundation should never be added to a colony unless the colony is crowded and in the midst of a honey flow. An exception to this rule is when you have no other alternative because you have no combs. Remember that if you are adding comb honey supers, they are "foundation" and not to be placed above an excluder. If brood is placed above the excluder, expect the bees to raise a queen that will emerge 11 days later. If there are drones caught above the excluder, an escape port should be made for them so their dead bodies do not block the excluder for worker bee passage.

Most bees have a tendency to store honey below the excluder which otherwise would be stored in combs immediately above the brood chamber. In many respects this is a good thing. If you keep your bees in a single story, 10-frame box, place the excluder over the top as soon as they begin to show signs of crowding. The bees will spread out below using most of the empty space before moving through the excluder to store honey. This causes trouble, too. If you keep the bees' brood nest confined to one box, the colony will frequently swarm because they don't have enough room in which to develop.

An excluder bound with wood. More expensive but provides a bee space on both sides and kills few bees in use.

Because of the confining effect that an excluder has on the queen, there is a greater tendency for colonies to develop with less brood, lower populations and with a greater propensity to swarm, than if no excluder is used. In my opinion you should never operate a colony and confine the queen to one brood nest. Two or more brood boxes gives the queen and bees a tremendous amount of freedom in comparison to being kept in one box and correspondingly reduces the threat of swarming. The arrangement of the combs of brood and other combs in the brood nest are a bit different from a honey production colony without the use of an excluder. The top box would be manipulated so that it contains a minimum of 8 frames of brood, with any remaining brood below in the center with frames of pollen and/or honey. The combs with brood right beneath the excluder "tell" the bees that they can immediately go on up and begin their work above the excluder.

To Use for Honey Production . . .

The excluder has certain advantages in honey production by preventing the queen from laying eggs in honey storage combs. Combs for extraction thus remain white, permitting examination of honey for color during extraction (removing those combs containing darker honey), and not contaminating the extracted honey with the brood combs, which causes a darkening of the honey.

A successful commercial beekeeper I worked with operated in the following way. In the late spring or early summer, supers were placed on the hives directly over the brood nest with no excluder beneath. The queen would usually move up into the super, laying eggs which the beekeeper would find in the next inspection of the colonies. The combs containing the queen, eggs and young larvae would then be placed down in the bottom box. Combs from the bottom box (the brood chamber) that were misshapen or chewed by mice or otherwise damaged would be removed, and an excluder would then be placed over the brood nest preventing the queen from a second venture into the honey supers.

Two advantages stem from this manipulation. First, poor combs are regularly removed, and there are usually some in every brood nest that should be culled. Second, when the excluder is first placed on the hive, bees are already working a number of combs above the excluder and will usually continue to do so. This method of supering prevents the frustrating situation often encountered when there is a honey flow on, when supers are added and the bees refuse to work on the other side of those wires.

The Taber Technique . . .

In my use of queen excluders, which is far removed from honey production, they are used to divide the brood nest. Every 7 to 10 days the brood nest is manipulated so that the young brood, eggs and unsealed larvae are placed above the excluder while the older brood is placed below the excluder with the queen. Frames of brood are kept at the same number above and below the excluder. Adult bees can be removed (shaken) from combs above the excluder and queens also can be raised above the excluder.

On a theoretical basis, you need to think of the queen as a releaser of a strong chemical, a pheromone, that is uniting the worker bees in many ways. This is called "queen substance". The queen is moving throughout the brood nest which should be shaped much like a sphere in your hive. Wherever she goes, she continuously radiates queen substance in all directions. The queen substance radiates outward by several inches at best but probably not as far as 12 inches. That means you can treat the bees in the upper supers of the hive as though they are queenless, when in actuality they are not. This is the basis of why, and how 2 queens can be operated in the same colony. It is also the basis for a potential method of requeening colonies during the honey flow.

Bigger populations of bees can be developed without the use of an excluder with correspondingly larger crops of honey. Remember that honey production per bee increases as the population of the colony increases. However, colony management to prevent the queen from going into honey supers without using queen excluders requires more beekeeping skill. Look for this subject in a future article.

MADISON LAB WILL CLOSE IN SEPTEMBER

On April 21st Dr. Edward Knipling, USDA ARS Service Administrator was contacted concerning the current and future status of the USDA Honey Bee Research Laboratory in Madison, WI.

Apparently, the final door has been closed as far as the Lab is concerned. It will no longer exist as of the end of September, 1986. Current on-going cooperative projects will continue however. Obligations previously undertaken by the ARS through the Lab will be met. A number of these will continue for several years. However, new research projects will not be undertaken. USDA Personnel will be redirected to the various Bee Labs throughout the Southern regions of the country — Tuscon, where pollination studies are focused; Baton Rouge, where the Africanized bee situtation is being looked at; and Weslaco, TX, where various mite problems are studied.

Given the static financial position of the Agency and the expressions from the bee industry that the mite, Africanized Bee and pollination problems receive increased attention, closing the Madison Lab was the only recourse in a no-win situation Knipling stated.

When asked about future studies in the northern regions of the country, including wintering, pollination and the rest, Knipling said that there were Universities in these areas that were presently engaged in these studies and would probably continue to do so.

The 4.3% Gram-Rudman reduction did not play a role in this decision according to Knipling, although it would probably affect remaining Labs if continued.

Although it seems certain that the Madison Lab will soon be gone, the names of many individuals that have worked there will remain in the annals of Apicultural Research. Names like Farrer, Peer, Harp, Detroy and MacGregor will not be forgotten. More recently, Floyd Moeller and Eric Erickson have made significant contributions to our knowledge and understanding of honey bees, pollination and pesticides.

Honey Bee Research has received a decisive blow with the closing of the Madison Lab. But, much work continues in the remaining Labs. Immediate problems are being addressed, and, in their usual fashion, the ARS will continue supplying solutions.

The BeeKeeping Industry must now make sure that these facilities are not threatened — by Gram-Rudman or other outside forces.□

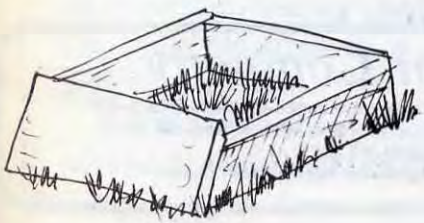
I've seen dozens of examples.

But with help from Peace Corps and other groups, things are beginning to change. Langstroth hives are being made available by the Swiss in some parts of the country and are copied by carpenters in other areas. Other equipment such as smokers, veils, hive tools, centrifuges, etc., are fabricated locally. But it is beyond the technological capacity that exists here to make a good foundation mill, and the enormous benefits of having such a machine are obvious. In an economy where pennies are important, any additional income or savings is a blessing to the farmers. And should we be able to acquire an embossing machine, it would be a godsend. I hope this brief information is sufficiently enlightening. Thank you for your prompt attention to our concerns and for your earnest efforts on our behalf, whatever the outcome may be.

Greg Schechtel
Peace Corps
American Embassy
Asuncion, Paraguay
South America

EDITOR'S NOTE:

As both a bee supply company and industry magazine we often receive letters from foreign nationals and Peace Corp workers in distant parts of the world seeking our help, either monetarily or through the donation of equipment. Because of the sheer number of such requests, it is impossible for us, or any bee supply manufacturer, to comply with them all. So, normally the policy is followed whereby we simply have to refuse all such requests. While we cannot comply with these requests, we realize that the intentions are honest and the desire to learn and grow in the beekeeping industry is present. Instead, we choose to publish many of these requests with the hope that some of our readers may find reason to help beekeepers in other countries. If, how, and when you decide to help is entirely up to you. We have included the complete addresses of the parties involved and would ask that you contact them directly. I am sure that I can speak for those writing and thank you all for your generous support.□



wax such as wax from brood comb. Look for evenness of color, correct weight, absence of cracks, coming out of the mold smoothly, little or no shrinkage, correct color and freedom from debris. Tips for casting wax are: pour exhibit all in one pour, use only beeswax from cappings, cast the object several times or filter it well to get rid of debris, cool the wax in the mold very slowly (wrap in towels, rags, insulation, keep in oven, etc.) and put the mold in the freezer for a short period of time (no more than ½ hour) to aid in removing the wax from the mold.

Bees may also have two classes — Italian and Caucasian. The display should be in a display case that is made well and will not allow bees to escape. Many fairs require either a plexiglas shield or the covering must be entirely plexiglas. Some provisions should be made where the display cases cannot be accidentally tipped over. There should be a queen, drones and workers present. The queen should be marked so she is easy to find. The brood comb should have a nice pattern of sealed brood, straight and free from queen cups, drone cells and holes. The feed frame should be similar to an extracting frame for display. Do not try to overpopulate the hive as they may overheat and die. Fill this exhibit at the ***last possible moment.*** It is best to use a queen from the hive that the brood frame has been taken from. The judge looks also for uniformity of color in the bees, but the beekeeper can't control that unless there is only one strain in the area and queens are mated only to that strain.

Gift packages are another item where judging could vary. It is a package made of various honey products that would make an attractive gift. I like to see a variety of honey products, neatly presented, with good quality. Usually there is a weight limitation so check to see if it is within limits. Try to avoid items of the same nature such as ten different types of extracted honey. Most fairs allow you to include items not produced in your apiary in this class. If you make your own labels, pay close attention to spelling and neatness. Usually the package is designed to be mailed so a semi-strong container should be considered.

Booth Displays are perhaps the hardest thing to plan and judge because everyone seems to have similar items and ideas. Usually a large percentage of the points are given to an education factor so posters, charts, books, etc. should be shown. I prefer quality home made posters over the commercially available items because it shows planning and research. The use of color is important and a variety of items will help catch the eye of the passerby. If there is a weight requirement of honey, try to bottle it in various sized containers so that it doesn't look like a grocery store shelf when displayed. Use balance in the arrangement, but not an item for item arrangement and use quality products.

Most fairs require that you register your entries long before the actual fair. Even though you do not know what colors or products you may have, enter all the categories that you have the possibility of having. This way you will not be eliminated from showing an entry when fair time arrives.□

James Thompson is a school teacher and president of the Ohio State Beekeepers Association. He has been judging Honey Shows for the last 4 years and judges 7 or 8 County and 2 State fairs each year.

★

Anybody Can Win, Unless There Happens To Be A Second Entry

★

fers time was not.

Suddenly it was spring. The colonies had to be moved from the original site; they had to be checked; and it had to be done in 2 days!

Procrastination had done in Duffer again. He had no protective equipment, no way to move the colonies and no place to put them when he got there.

Well, I put him in touch with some friends who got him moved, showed him what equipment he needed and how to use it when it came. You can't imagine what visions went through his head when he started looking at smokers.

It was about this time that he started visiting us on a regular basis. He found out that Diana had a fair hand with the bees and started to pick her brain, so to speak. So it was no surprise when he called in an uproar about the new strain of bee over in Europe.

His research had turned up some interesting information regarding these bees. It seems they were building 8-sided cells, had 4 legs and seemed not to care about nectar at all. Or so he said. Since I wasn't about to read the source of his information, I listened to his rantings with a grain of salt. When questioned, he was vague but mentioned something about a supermarket check stand.

After that I began to use whole bags of salt. But not Duffer.

His reasoning was that this new bee was the result of the power plant accident in the USSR awhile back. He thought that it was timed just right so that both drones and virgin queens in the area would have been exposed to radiation during mating. Not a bad assumption, considering his source. He began to envision all sorts of possible mutations and projects he could begin as a result — another of Duffers "Quantum Leaps in Logic".

For all his illogic though, Duffer did manage to focus in on a problem I hadn't considered, even if he didn't see it.

We really are at the mercy of our technology. From simple things like the car not starting to the complex like nuclear power plants.

When our car (washing machine, dishwasher, computer) breaks down we either take the time to repair it ourselves or have somebody do it for us. This is inconvenient at best - to nervewracking at worst and always expensive. In any case, we are at a loss without that machine we took for granted.

When something as sophisticated and potentially dangerous as a nuclear power plant goes down, the inconvenience becomes life-threatening.

I don't think there are bees in Europe building 8-sided cells, but there could be and there is little we can do to prevent it. Budgets, cost accounting and schedules very often take priority over common sense safety; in the manufacture of cars, space ships or power plants. Consumer attention to these details and constant pressure on manufacturers will certainly help call attention to these problems.

But for the moment, I wonder what a honey bee with 4 legs looks like.□

FOR THE RECORD

Gleanings continually seeks accuracy in our publication. We recognize that errors do occur and use this space to correct them when discovered by staff or readers. Mistakes may occur in writing, editing or mechanical reproduction of the magazine. It is our policy to correct these mistakes. We encourage questions or comments from readers. Call (216) 725-6677 during business hours or write us at the address on the inside cover.

We inadvertently omitted Peggie Venemon as co-author of the article "Madden's Apples and Hiatt's Bees". The editors apologize for the omission.

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On page 212 of the May issue the photo of Mr. Roland Jarry and Robert Cosby was not printed. We believe this was due to a printing error but for whatever reason are sorry for the omission.

•

In the May issue the answers for 'Testing Your Beekeeping Knowledge' were not on page 255 as stated, but on page 260. We hope you found them anyway.

the hive. The neighbor almost immediately recognized the queen, pointing his finger. I didn't know what a queen bee was supposed to look like, and failed to identify her, for to me all the bees looked the same. The calm behavior of the insects fascinated me immensely, as I had never witnessed anything like that before. I was amazed that neither of us had gotten even a single sting.

Seeing the orderly procession of a "million" bees was a beautiful sight. Some at the entrance were fanning their wings as if they were happy having found a hollow for their new home. Those flying around began settling with their mates on the ground or gathering on the limb in the tree. After a while Mr. Smith shook the limb into the pan and dumped them in front of the hive like the first. He said that a few would return to that limb but would eventually come to the hive. I marveled at the gentleness of the bees which were noted by many to be touchy and avenging.

"Tonight after dark when all the bees are in," Mr. Smith suggested, "move them to the location where you want them but not where there will be plowing or hoeing up close." He talked as if they were mine.

"Don't you want to take them?" I asked, unbelievingly.

The kindly neighbor wanted me to learn about beekeeping. He had a good book that I could use.

Like the hurrying waters of the mountain stream below the cliff that never tire of flowing, like the orioles and the mourning doves that enliven the woods with their songs of joy and exhilaration, so the honey bees wing over the ocean of bursting blossoms beautiful in the wafting breeze to keep their secret pledges to the perpetuation of the respective species.

Here above the South Santiam River I could lose myself in the serenity and mystery that permeated the valley where wild life abounded and lived free. The bees in the hollow of the snag in the opening of fir trees remained strong and healthy year after year, surviving even a bitter and demanding winter.

Nothing could have served them better than the cavity in the broken tree that could shelter them yet for a few more years.□

☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

HOW DO YOU SAY . . .?

Before leaving on a trip to Europe last year, I spent several nights at the local library finding out how HONEY was written so that I would be prepared to visit some Beekeepers and taste some native HONEY. My time was well spent. I didn't have any trouble spotting the Honey signs as Marcia, my wife, and I drove the rural roads.

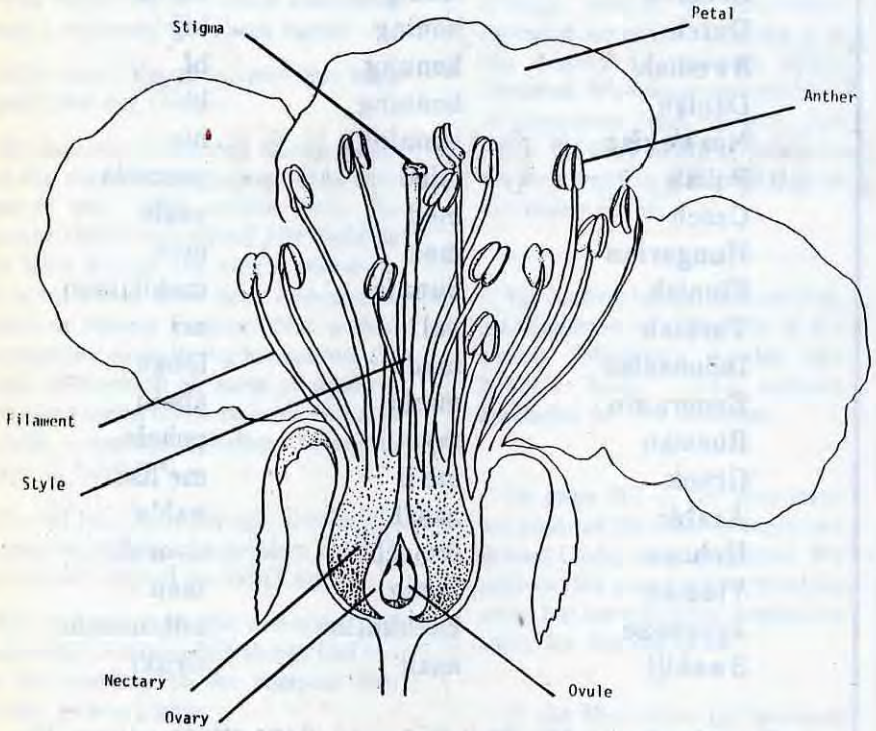
Recently, I found a copy of "The Concise Dictionary of TWENTY-SIX LANGUAGES" by Peter M. Bergman, distributed by Crown Publishers Inc. It listed translations of the words Honey and Bee. I hope you find the similarities interesting, and of value to you in your travels soon.

LANGUAGE	*HONEY*	*BEE*
French	miel	abeille
Spanish	miel	abeja
Italian	miele	ape
Portuguese	mel	abelha
Rumanian	miere	albina
German	Honig	Biene
Dutch	honing	bij
Swedish	honung	bi
Danish	honning	bi
Norwegian	honning	bie
Polish	miod	pszczola
Czech	med	vcela
Hungarian	mez	meh
Finnish	hunaja	mehilainen
Turkish	bal	ari
Indonesian	mada	lebah
Esperanto	mielo	abelo
Russian	myot	pchela
Greek	me'li	me'liss
Arabic	aasal	nahla
Hebrew	dvasch	dvorah
Yiddish	honig	bien
Japanese	hachimitsu	mitsubachi
Swahili	asali	nyuki

Our thanks to Mr. Phil Delucchi, 3436 W. Bradison, Ft. Worth, Texas 76109 for supplying this information.□

Answers To Testing Your Beekeeping Knowledge

1. ***True*** The number of honey bees foraging from a colony is directly related to the size of the adult population. As the population increases, relatively fewer bees are engaged in the rearing of brood and a greater percentage are available for field work as weather conditions allow. Thus, package bees have proven inferior to strong overwintered colonies for pollination of early season crops.
2. ***True*** As with many crops that are self-pollinated, peanut yields are increased with bee visitations.
3. ***False*** Achieving adequate pollination in pear orchards is difficult because pear nectar is low in sugar and unattractive relative to other fruit species. Honey bees work pears best when colonies are first put into the orchard and later they tend to be attracted to competing flowers in the area. Therefore, it is desirable to place colonies well within the orchard when 25 to 50% of the flowers are open.
4. ***False*** Auto pollination is a type of self-pollination where pollen is automatically deposited on the stigma when the flower opens. Self-pollination can occur within the flower, between flowers on the same plant or between plants of identical genetic makeup.
5. ***False*** Buckwheat flowers are only attractive to honey bees in the morning.
6. C) 25 mph
7. C) Caucasian
8. C) Staminate
9. A) Hermaphrodite
10. B) Pistillate
11. Pollinator is the biological agent which is responsible for distributing pollen (bee, fly, moth, bird, bat, etc.) Pollinizer refers to the plant source of pollen used in pollination.
12. See diagram that follows:



There were a possible 20 points in the test today. Check the table right 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

Exerpts From The DIARY OF JOHN BRUCE

1000 FIVE-POUND PAILS

I was a boy that read a lot and I got hold of an old book on bees. I read it from cover to cover and was inspired by the "rosy" picture of getting rich with bees. It told that one could take a hive of bees and they would make sixty or seventy pounds of honey, swarm three or more times and the second swarms would make extra honey. I began to figure, and according to the account, one swarm would produce, along with its second swarms, about two hundred pounds of honey.

I was also an avid squirrel hunter and knew of a lot of bee trees. Now, if a hive could produce that much honey all I had to do was to cut those bee trees and sell the honey. I had ten swarms of bees in box hives that I had caught the year before. These, along with my trees should yield about a ***thousand five-pound pails of honey.*** I was on my way to riches.

I had some money that I earned at field work for the neighbors, so I went to the general store and ordered a thousand five-pound pails at a nickel each. When they came I had a wagon load! My dad hauled them home and put them in the corn crib. He teased me about them, but I was sure I knew what I was doing.

He said he would help me cut the trees. One day soon afterwards, we cut one tree and it was loaded with honey. I was jubilant! (Look at all the honey I was going to get, multiply what I had by all those bee trees.)

When we cut the next tree, it had a lot of brood comb and only about ten pounds of honey. No matter, the next one would be better; but lo and behold, it was the forerunner of all the rest. When it was done I had a hundred pails of honey (about enough to pay for the pails).

My father laughed at me but no one could laugh at me long. I would fill those pails. It took me two years and a lot of bees transferred from boxes and logs into frame hives before I ran out of pails.

By then I had the bees, so I kept on with them and through the years I've filled thousands of pails. If I hadn't made a fool of myself buying pails I probably never would have been a beekeeper.

When I think about it, I am grateful for that error in judgment, as I gained a good and interesting way of life. I've had lots of good crops and enough bad calamities to even things out. But I enjoyed the work and the daily problems that came up to be solved. A beekeepers life is never dull; unless so willed. There

Continued on Page 310

GRAMM-RUDMAN-HOLLINGS TAKES BITE OF HONEY LOAN RATE

If the GRH (Gramm-Rudman-Hollings) proposal becomes law, the effect on the honey price support program will be a 4.3% reduction of the prices originally set by the Department of Agriculture earlier this year. This brings the per pound price of white honey down to $.642. The original 1986 price was $.671/lb. All other grades are affected in a similar manner.

The buy-back portion of the program is still under consideration, and will apparently be decided at a later date. It appears as if the Secretary of Agriculture will determine the buy-back price, as stated in the original Farm Bill.

Adulteration tests will be made on entries into the system, with 10% of each entry tested for moisture and contamination. All sorts of bad things will happen to producers found guilty of submitting adulterated honey. All entries will be tested when the honey is released to paid-up producers.

The new Farm Bill, which covers the Honey Loan Program is still up in the air however. Although it probably will pass with the existing restrictions (GRH), the die has been cast for all of agriculture. The 'free market' trend is gaining favor in Washington and will probably continue long enough to become standard policy, no matter which Administration comes to power next.

This should serve as notice to the honey industry. Total dependence on this or any subsidy program will, in all probability, be a thing of the past in the near future. Marketing techniques must change and sales, promotion and image walk hand in hand with production.□

Do Bees Get Angry?

By KEN KIFER
Rt. 1, Box 133-1
Scottsboro, Al. 35768

The other day I went to see Billy Hayas to show my new coveralls. When I got to his trailer he was returning from the field. "Billy," I said, "I want you to see my new coveralls!" "Don't have time," he replied. "That fool new horse of mine just knocked over a bee hive." Well, I went with Billy while he tried to get the hive back together. But it was no soap, the bees were stinging him so bad he couldn't get anything done. "Those bees sure are ANGRY," he said. "Billy, bees don't get angry; they are purely instinctive creatures." "Well, they acted angry enough for me! Say! You said something about new coveralls?" "Yeah, but they're brand new and I don't want to get them dirty." "I won't get them dirty, I just need them for a second." In a few minutes Billy was putting them on. I waited down by the trailer this time, even though the bees weren't angry. In a few minutes I could hear Billy hooping and hollaring. Then I could barely make out my new coveralls flying through the woods. It was quiet for a while, and then Billy approached the trailer from the other direction. My coveralls were a sight! Not only smeared in red clay, but the right leg had nearly been torn off. "I had to scoot under a barb wire fence," he explained. I felt the blood rushing to my face and a strange feeling came over me.

"You're not mad at me?" he asked. "Of course, I'm not mad" I said as my eyes focused on an axe. I really don't think Billy is faster than I am, I just guess he figured out what I was going to do before I did. At any rate, he was halfway to a small tree before I picked up the axe. But I know he isn't as smart as me, because it was a SMALL tree. So Billy hung onto a branch a dozen feet up, while I chopped the tree down. He even found time to be philosophical. "The bees weren't angry at me and now you're not angry at me. I hate to think what y'all would have done if you had been angry!"

The idea that animals have no feelings goes back to Rene Descartes who influenced both religious and scientific thought with his belief that animals are only complicated machines. He said, "I think, therefore I am." Since fundamental Christianity believes that man and animals are separate acts of creation, and that man alone is made in God's image, we might expect to find it's spokesmen stressing this point of view. But we usually don't.

On the other hand, we would expect scientists to oppose the idea that animals are basically different from man. After all, we all share the same evolutionary family tree. But such is not the case. I have learned that men do not have instincts like animals do. To get the full extent of these ideas as applied to the honey bee, you need to read (or re-read) the article by N.E. Gary in THE HIVE AND THE HONEY BEE. But I think a more profitable course would be to look at the matter ourselves.

I would like to make the point that the question of whether bees get angry or not is beyond scientific proof. First, because there is no device that can measure anger, and second, because we have no clear definition of anger anyway. It seems to me that anger is instinctive, and therefore is a trait shared among most animals. Therefore I have no trouble in classifying bees as angry. As I hoped I showed in my story, it is possible to get angry without being aware of it. In fact, although the above story is fiction, I very nearly clobbered a fellow with a broom recently, and I did not realize what I was doing until the broom was coming down.

But what of other emotions, like joy? Can a bee be happy and unaware of it's own existance? I wouldn't think so. From my own experiences I know that bees must be almost unaware. I have seen bees hauling the same chip of wood for days in an observation hive, passing within half an inch of the entrance again and again, until I got tired of watching. I watched a bee I had accidentally decapitated carefully groom itself, oblivious to the worst loss of all. On the other hand, I have watched a bee discover a bit of honey and strop it's tongue in it, and I felt a pleasure there, like a child who has discovered where the candy is hidden.

If this article accomplishes anything at all, I hope it is not for you to accept the ideas of Descartes nor for you to decide that bees are fully aware, but rather, it makes you aware that the matter is not completely settled. This, so you'll look for evidence of your own. But if I haven't even accomplished that, I hope I will have brought to an end, or at least diminished this stupid habit of correcting people whenever they say, "Those bees sure were angry!"□

There are other ways to preserve the life of your wood. Many, if not most, beekeepers paint their equipment. Paint goes a long way in preserving wood by slowing the migration of water into the wood. The key word here is slow, not stop. This is especially true for wood placed on the ground. Paint also has little ability in stopping decay organisms once they invade the wood.

If you scrape and repaint wood every 2-4 years, depending on wear and tear and local weather, it will probably service you for many years. Paint has no insecticidal or fungicidal properties however. If dry or damp wood termites are pests in your area this could be a serious problem.

> . . . prices will vary according to . . . the cost of these materials in your area, the wear and tear on your equipment and weather conditions where your colonies live.

Good quality exterior grade latex paint costs about $20/gallon. So does a gallon of good latex primer. A gallon covers about 100-200 square feet of wood surface. The difference is raw vs. coated wood and the thickness of the coat applied. This means it will cost about $25-30 to treat 100 sq. ft. of wood. This is about the best paint treatment you can give and will last about 3-4 years before retreatment is required. The next treatment will only require a one coat application after cleaning and scraping the wood.

From the previous information you have probably guessed that some combination of these treatments will increase protection — for both wood and bees.

A repellent treatment of raw wood, using the melted parafin, boiled linseed oil or exterior grade varnish and turpentine is an excellent primer. This important first step could include 1½ cups copper napthenate as a preservative. This will provide some fungicidal properties, good for damp areas, and minimal insecticidal action for termites. The cost of this solution will run about $15/gallon and will treat roughly 100 sq. ft. This may change depending on application — dipping vs. brushing. Dipping probably does a better job of penetrating cut ends and hairline cracks while brushing uses less solution. If you are concerned about the inside of equipment such as supers, consider brushing. But for bottom boards, stands and covers dipping is probably best.

Once this has air dried for 2-4 days it should have lost most of its odor. It is then ready for painting. Stands, bottom boards and covers should always get two coats. You can start cutting corners by giving the rest only one coat because of the repellent already applied, but it is not recommended. Two coats on all exterior wood will give it a high degree of protection. The undercoat of repellent/preservative will greatly retard outward migration of moisture, preventing blistering and peeling.

The cost of this paint will be about $12-$15 per 100 sq. ft. A marked reduction over treating raw wood. This double protection will add greatly to the length of time between required treatments. And, if the copper napthenate was added to the original treatment (and subsequently sealed under the paint) the fungicidal activity will further increase the life of your equipment.

Depending on your location, the dampness of the area and the care given the equipment, this original treatment will last from 5 - 7 years without blistering, peeling or deteriorating.

The total cost of this first treatment is roughly $28 per 100 sq. ft. and will last conservatively about 6 years. A second treatment of paint (one coat) will cost about $8 per 100 sq. ft. and last about 3 years. Total — $32-$38 for 10 years protection.

The cost of paint alone is aproximately $25-$30/100 sq. ft. for the first treatment, lasting 3-5 years. Then, repaint every 2-4 years at a present day cost of $7/100 sq. ft. Total cost — $38-$45 for 10 years protection. But don't forget, no fungicidal protection and a minimum of 3 treatments, and perhaps as many as 5.

The repellent only treatment costs $15/100 sq. ft. for the first treatment and repeat treatments every 2-4 years cost the same. Thus, 10 years protection (if possible) would run about $60-75.

A quick review of these treatments, for ***about*** 10 years protection — Repellent only $75; Paint only $50; Paint and repellent/preservative $40; Paint and repellent $35; Preservative only (copper-8-quinolinolate) $28. These costs don't include one ***major*** factor — labor and convenience. All treatments will protect your wood about the same for the 10 years if retreatment is given on appropriate schedules.

Remember, these prices will vary according to several factors. The cost of material in your area, the wear and tear your equipment normally suffers in a 10 year period and the weather conditions where your colonies live. But these costs are fairly representative on a proportional basis.

You have a lot of choices when treating your equipment. You can consider cost, labor, retreatment and life expectancy. The choice is yours and best made by you. But if you are aware of all the things involved when making this decision you can significantly reduce your future maintenance and labor costs and still have good looking and well-maintained equipment.

EDITOR'S NOTE:

I know I'm going to get a rash of calls from people telling me where copper-8-quinolinolate compounds are available, but the only source we were able to locate in the short time available was through this mail order company. To reach them call: 1-800-524-1093. NJ residents call (201) 496-4770. This is NOT an endorsement of this product over any other, but simply information as to source.

The prices quoted in this article have been gleaned from local retail suppliers and the experiences of several beekeepers.

News From Latin America

By LEWIS MEDINA

Laves, Puerto Rico — Professor Tito Nieves, member of the Beekeepers Association of Puerto Rico, says that they couldn't hold the Second Bee Festival in 1985 but it will be organized in 1986.

Senator Justo A. Mender, chairman of the Agricultural Commission, says they keep the government subsidy — that means that the government pays 50% in all purchases of beekeeping equipment, excepting queens.

Imports from Dominican Republic

Many Puerto Rican businesses are importing honey from the neighboring Dominican Republic to be bottled locally and marketed.

Tito Nieves says the practice harms the local beekeepers, but their hands are tied. Wholesale cost of a Dominican Republic bottle of honey is $0.35 while the Puerto Rican honey is $0.75.

Naturism Helping

According to naturist Ms. Lydia Perez, naturism could help to increase the consumption of honey in Puerto Rico because it is an excellent natural food.

Several publications in the naturist field (in spanish) recommend honey — ***Salad Natural, Nata-Salad*** magazine edited by Aida Rivera and ***Medicinas Naturales*** edited by Dr. Joseph Fitzgerald.

Meanwhile, pharmacists Jorge Accuedo Borren and Mrs. Alva Ramirez say local drugstores are selling royal-honey imported from the People's Republic of China.

Honey Bees in Antigua

Antiqua-Redonda is a new independent nation in the Caribbean — formerly a British colony.

According to Ruth Spencer, program advisor of the Meals for Millions/ Freedom from Hunger Foundation, the organization is providing technical and economical assistance to develop bee keeping.

Antigua still has less than 300 hives, and Mr. Eustace Samuel is the largest beekeeper with 80 bee hives.

But the foundation has been successful in proving that beekeeping is economically viable and a good investment. Currently the local demand for honey is bigger than production.

Nicaragua Moving Up

Currently Nicaragua (Central America) has to import bees to supply the local demand. Neighboring Honduras is a steady supplier but the government has set up a National Plan for Expanding Beekeeping.

The goal is to have in 1986 about 266,000 honey colonies with a yearly production of 400 tons. That will allow Nicaragua to cut imports and begin exporting honey.

Meanwhile, the government is asking for international help. France, with experience in cooperatives with apiaries, is giving advice and 260 beekeepers and technicians have been trained in Costa Rica, Panama and Brazil.

Guyana Declines Production

Since 1976, bee hives in Guyana (South America) have been left and as a result honey production has decreased dramatically. The Guyana Beekeepers Association, founded in 1932, was completely inactive during 1980 - early 1985. Finally the government decided to give them a little push and are becoming active once again.

According to Mr. Ahnand Rajkumar, there are several reasons for the industry's decline; 1) in 1974 the African or Africanized Bee got loose in neighboring Brazil and entered Guyana in 1976, 2) Guayanese, unable to handle the Africanized Bees, left their hives, 3) and for many people, beekeeping was a second or third income source, so th dropped it.

Mr. Rajkumar says he has learned to deal with Africanized Bees and is keeping active in the field.

Africans: A Good Point

"If you cannot beat them, join them" is an American expression. And beekeepers in Panama and Columbia had been conducting experiments with Africanized bees and found them better than Italian or Native bees for the pollination of coffee plantations, vegetable and bean fields.

AFDA Helping Apiculture

Two young students of the University Campus of Mayaguez (Puerto Rico), Ms. Maria Fernandez and Hiram Forestier, say that apiculture is a viable enterprise in this Caribbean nation due to a high number of flowering trees and shrubs and of course the lack of winter.

They explain that the Administration of Agricultural Development of Puerto Rico (known in spanish as AFDA) is giving a subsidy to beekeepers with 20 co onies (hives) or more. To these, AFD pays 50% of all equipment bought excepting the queens.□

Bruce . . .
is always something more to learn and I doubt if it will ever be all solved and become a mechanical job.

BLACK MAGIC

When I was younger, I took bees on shares. I only had about thirty hives of my own but I worked about three hundred altogether. Many of these hives were comb honey hives.

One old fellow (call him Dodge) had eighty colonies and they were also comb honey colonies. Before I took them over, his son, a high school boy, had them for a 4-H project and he had started with twenty hives. He or his father didn't practice swarm control and they hived all their swarms. Mr. Dodge thought the more swarms he caught, the more successful he was, (honey was a secondary item).

The boy and I bought out the equipment of a hundred colony yard that h died of disease. I boiled all of the equipment in lye water and we filled four hun-

Continued on Page 316

News & Events

★ *OKLAHOMA* ★

At their Annual Fall Meeting on October 19, the Oklahoma State Beekeepers Association selected M.L. Lashbrook as their "Beekeeper of the Year".

Mr. Lashbrook has served as President of their organization and has been in the bee business for over 27 years.

Jim Grayson (L) presents the Albert Lincoln Award to M.L. Lashbrook (R), Oklahoma Beekeeper of the Year.

Mr. Laskbrook's beekeeping activities include building much of his own equipment and selling queens, pollen and honey. He is a strong believer in consumer education regarding pollination and honey bees and has worked to that end in county fairs, co-founding the East Central Oklahoma Beekeepers Association, video production and working with 4-H Clubs.

Congratulations from the Oklahoma Association and all of us at *GLEANINGS.*

★ *ONTARIO* ★

The Canadian government has banned the importation in Eastern Canada of bees from the United States.

The ban, effective March 12, is to last until at least December 31, 1986 and covers all provinces east of Manitoba.

At the same time, the Ontario government has barred the movement of bees and queens from Western Canada.

Ontario is also moving to put some teeth into the ban. It plans to boost the fines for offenses against the regulations from C$10 to C$5,000 for a first offense. A second offense would draw a C$10,000 fine.

Agriculture Minister John Wise said the U.S. ban was imposed because a deadly mite that attacks bees has been found in several states that export bees to Canada.

The ban covers provinces east of Manitoba because most eastern beekeepers overwinter their bees and the tracheal mite could become established in Canadian bee population.

Western beekeepers tend to allow their bees to die each fall and then import new ones in the spring. Wise said bees imported into Western Canada will require a certificate from the U.S. Department of Agriculture stating they are free of the mite.

In another move to protect the Canadian bee population, the government has decided that import permits now will be required for bees from New Zealand.

★ *QUEBEC* ★

Quebec beekeepers plan to adopt a standard quality seal to help their C$18-million industry compete with imports.

At a conference in Sherbrooke, the federation of Quebec Honey Producers decided on the final touches on a progam to adopt the standard.

Along with a quality seal — which would meet higher standards than for Canada's No. 1 grade awarded by federal inspectors — the federation wants a standard label identifying honey made in Quebec.

There are 200 fulltime beekeepers in the federation. To make a reasonable living a producer needs about 300 hives, each producing some 68 kilograms of honey.

Said Jean-Francois Blais, a federation official: "There are no standards controls or regulations in this sector. Anybody who wants can produce honey and sell it. The federation wants a ruling to standardize and allow Quebec honey to be identified as such".

Blais said several Quebec brands now contain imported honey.

"Quebec honey has a special fragrance, while imported honey stored in a barrel for two or three years looses its flavor and can contain high percentages of sugar."

Luc Nicole, president of the Quebec Beekeepers Federation, said a uniform, province-wide standard for honey would be based on color and plant origin.

The federation has been working on the plan for two years. Producers who accept the standard will agree to respect specified standards for quality, sanitation and the plants the bees harvest.

Nicole said the plan would not create a monopoly — or cause prices to rise — because imported honey would still be available. Quebec bees produce enough honey to fill the province's market, but imported honey from Ontario and foreign countries such as Argentina and China take a good share of the market — mainly through brands sold in supermarkets.

"This forces Quebec producers to seek outside markets, mainly in the United States," Nicole said. "All we want to do is capture the Quebec market. We can't stop the imports, but we can make our product better known."

One major honey packer and distributor has his doubts about the plan.

Paul Doyen, of Doyen and Doyen Ltee, said his company buys honey in bulk from producers in Quebec, Ontario and the Western Provinces. The company then sells it across the country under its own name.

"Quebec honey is not better than Ontario honey," Doyen said. "It's the same

bees and the same flowers."

The next step for the federation is to submit the quality plan to Quebec Agriculture Minister Michel Page for his reaction.

★ *ALBERTA* ★

Beekeeping For Seniors

As part of the international ELDERHOSTEL program, FAIRVIEW COLLEGE will offer a two-week practical intensive course in beekeeping, honey production and queen rearing. It is intended for those seniors (age 60 & over) who have some prior experience with a serious intent to keep bees.

Dates: June 15-28, 1986. Location: Fairveiw, Alberta, Canada. Tuition: Low cost. Includes accommodation, meals, classes and a variety of extracurricular activities.

FAIRVIEW COLLEGE has modern residences and a cafeteria, a new Beekeeping building and a 300 hive demonstration apiary. Its commercial program is recognized internationally and is involved in the raising and release of the Alberta Bee.

To apply for this course, please contact ELDERHOSTEL directly and ask to be put on the mailing list for their free Summer catalogue: ELDERHOSTEL, P.O. Box 4400, Fredricton, New Brunswick, Canada E3B 5A3.

Beaverlodge Beekeeper's Field Day

The 32nd Beaverlodge Beekeepers' Field Day will be held on June 13th at the Beaverlodge Research Station. Dr. Don Nelson says the highlight of this years' field day will be the presentations by Dr. W. Ritter of West Germany on the "Biology and Control of Varroa jacobsoni and Acarapis woodi". As well there will be special displays in celebration of the Centennial year of the Research Branch.

For further information contact: D.L. Nelson, Agriculture Canada, Box 29, Beaverlodge, Alberta, Canada TOH OCO. Phone: (403) 354-2212.

★ *NEW YORK* ★

The Western New York Honey Producers Association will hold a meeting on June 14, 1986 from 10 a.m. to 3 p.m. at the Niagara County 4-H Training Center, 4487 Lake Avenue, Lockport, New York.

The program will include Joan Spielholz from Cornell who will present a slide and video demonstration on American Foulbrood, ID and Control. For more information contact: Sally Potocyak, 541 Bell Road, Corfu, New York, 14036.

Queen Rearing Seminar

"A Queen Rearing and Use for the Small Beekeeping Operation" Seminar will be held at the William H. Miner Agricultural Research Institute in Chazy, New York on Saturday, June 21, 1986. The program will run from 9:00 a.m. until 4:30 p.m.

Dr. Larry Connor from Beekeeping Education Service will be conducting the Seminar.

Cost will be $15/person or $25/couple. The Seminar will take place only if there is enough interest. Preregistration is requested in advance NO LATER than June 7th.

Agenda:

Queen Rearing in the North
- Threats from Southern States
- Biology of the Queen Rearing Process
- Mating of Honey Bee Queens

Producing Queens Without Grafting
- Simple Procedures
- Cell Starting and Finishing Units

Producing Queens by Grafting
- Cell Bar Preparation
- Cell Starting and Finishing Units

Queen Mating Nucs
- Preparing a Mating Nuc
- Evaluating a Queen in a Nuc

Queen Storage

We will be spending about 2 hours in the bee yard preparing and observing cell starting and cell finishing. Please bring both appropriate attire and a picnic lunch.

Contact Loretta M. Suprenant, Miner Institution, Chazy, New York 12921, (518) 846-8020 for further information.

★ *CONNECTICUT* ★

June 28 - Bethel: A Day with Steve Taber

Northeastern beekeepers will have a rare chance to see and hear popular author/lecturer/researcher Steve Taber in Bethel, CT. at the Connecticut Beekeepers Association June Field Day.

The meeting will be held at the Cooperative Extension Service Office on Route 6 in Bethel. The free program is open to the public.

The Saturday June 28 meeting will start with the business meeting at 10 a.m. At 11 a.m. Taber will speak on "What You Should Know about Queen Bees".

At noon, a picnic potluck will be offered. At 1 p.m. the group will move to bee colonies for a "Hive-side Lecture" by Mr. Taber. The program will last as long as the participants and Mr. Taber are willing!

His visit to Connecticut is co-sponsored by Beekeeping Education Service, which will offer a Sunday Field Internship with Mr. Taber on Sunday, June 29 in Bristol.

For more information contact Mr. Chuck Howe, 5½ Mile Road, Goshen, Ct. 06456.

Western Connecticut Beekeepers Association Third Annual Bee Bonanza Set for July 13

The third annual Bee Bonanza will be held Sunday, July 13 from 11 a.m. to p.m. at the Fairfield County Extension Center on Route 6 in Bethel, Connecticut.

The Western Connecticut Beekeepers Association will sponsor the event. Beekeepers, suppliers, and the general public are invited. Admission is free.

There will be demonstrations in bee handling, movies, slide shows, door prizes and other demonstrations and contests.

Suppliers to beekeepers will be displaying a wide variety of wares. There will be displays explaining bee culture, the honey harvest and other aspects of beekeeping that will be of interest to everyone, whether or not they keep bees. Plan now to attend this exciting annual event.

★ *GEORGIA* ★

Annual Beekeeping Short Course

The annual beekeepers short course for both beginners and experienced beekeepers will be held June 14 at the University of Georgia in Athens. The meeting, sponsored by the Depart. of Entomology and the Georgia Beekeepers Association, will be from

8:30 a.m. to 4:30 p.m. Registration starts at 7:30 a.m. at the Chemistry Building Auditorium. Demonstrations of practical beekeeping will begin at 1:30 p.m. at the University Apiary on the Horticulture Farm located on Highway 53, six miles south of Athens.

Topics and demonstrations include honey bee life cycles and activities, queen rearing and colony division, management for honey production, honey house operation, recognition prevention and control of bee diseases, package installation and handling of bees. The potential impact of Africanized honey bees and the parasitic Asiatic mites on beekeeping in the U.S. will be highlighted.

The teaching staff will consist of several well known commercial honey and queen and package bee producers from Georgia. The course fee is $20.00 per person. Advanced registration is requested by June 11, 1986.

For additional information, program and registration forms contact Dr. Alfred Dietz, Department of Entomology, University of Georgia, Athens, Georgia 30602 or telephone (404) 542-2816 or 542-8711.

★ OHIO ★

Ohio Honey Queen Applications Sought

Applications are now being taken for the annual Ohio Honey Queen competition held during the summer meeting of the Ohio State Beekeepers Association in Wooster, July 18th and 19th. Applications, rules and regulations are available from Teresa Crone, 5012 David Court, Cincinnati, Ohio 45215. Candidates must be 18 years of age and not over 22 years of age by July 1 of the contest year. Deadline is June 15th.

International Beekeeping Seminar

The Annual International Beekeeping Seminar is set to take place at the Agricultural Technical Institute, Wooster, Ohio from July 21 — August 1, 1986. This is a comprehensive introduction to developmental beekeeping with emphasis on the tropics and subtropics. A discount of $200 on reservations received before June 1 will be given. For information contact Dr. Clyde Oplinger, ATI, Wooster, Ohio 44691, phone (216) 264-3911.

Summer Seminars at ATI in Wooster:

Queen Production. June 16-20, 8:00 a.m. — 4:30 p.m. Credit, non-credit, good practical experience, room and meals available.

Basic Beekeeping. July 7-11, 8:00 a.m. — 4:30 p.m. Topics include honey production, honey and wax processing, bee biology and behavior, disease and pest control, equipment, hive management and pollination. Credit, non-credit, room and meals available.

Comb Honey Production. August 18-19. Covers all aspects of producing comb honey.

All seminars originate from the new fully equipped facility. For more information on these or any Beekeeping Seminars contact Dr. James E. Tew, The Ohio State University, Agricultural Technical Institute, Wooster, Ohio 44691, Phone (216) 264-3911.

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★ ***YOUR NEXT*** ★

★ ***MEETING NOTICE*** ★

★ ***COULD HAVE BEEN*** ★

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★ PENNSYLVANIA ★

Local Beekeepers' Annual Meeting To Feature Honey Bee Disease Workshop

DOYLESTOWN — A program detailing field and laboratory diagnosis of honey bee diseases will be featured at the Annual Summer Bee Meeting Sunday, June 22, sponsored by Delaware Valley College and the Bucks County Beekeepers' Association and held at the College.

Jack Matthenius, New Jersey Supervisor of Bee culture, will present the topic, assisted by Dr. Robert Berthold, Beekeeping Specialist for the College.

The formal portion of the program, which begins at 1:30 p.m., will be presented using the apiary and Honey House at the campus on Route 202, one mile west of Doylestown. It will be preceded by a "bring-your-own" picnic lunch in front of Mandell Hall. Refreshments will be served following the program, which is open to the public.

In case of inclement weather, the formal part of the presentation will be held in Mandell Hall, room 114.

On the following Friday, Saturday and Sunday, June 27, 28, and 29, Delaware Valley College will again offer its popular three-day beekeeping short course. The course is under the direction of Dr. Berthold, assisted by Matthenius and a number of other skilled apiarists.

For additional information about either of these programs, contact Dr. Berthold, Delaware Valley College, Doylestown, PA 18901, telephone (215) 345-1500.

★ DELAWARE ★

AN EARLY LOOK AT EAS '86

EAS Master Beekeeper Certification Program

Testing for the EAS Master Beekeeper Certification Program will be held in conjunction with the Annual EAS Conference at the University of Delaware, Newark, DE, on August 6, 1986.

The purpose of the Master Beekeeper certification program is to identify and certify individuals that have a detailed knowledge of honey bee biology, expertise in the proper practices of beekeeping, and can present this information in a detailed, accurate, clear and authoritative manner. The Master Beekeeper Program was originally developed in 1976 at Cornell University under the direction of Dr. Roger A. Morse. The Eastern Apicultural Society of North America (EAS) expanded and assumed the responsibilities of the program in 1979.

The certification program includes a series of three tests: 1) a written examination on all aspects of beekeeping; 2) a laboratory practical examination on recognition of bee diseases, equipment and proper practices; and 3) an apiary performance test on the proper explanation of beekeeping practices and on the handling of bee colonies.

Any experienced beekeeper is eligible to apply for certification as a Master

Beekeeper. Persons interested in applying should have a minimum of 5 years of experience as a serious beekeeper in some aspect of apiary management such as a dedicated hobbyist, a commercial beekeeper, working for a commercial beekeeper, or apiary inspection. Also, it is recommended that applicants have completed the equivalent of a college level course in beekeeping. An applicant should be well read in the apicultural literature.

Persons wishing to apply for certification should send a letter to either the Secretary of EAS, Mrs. Loretta Suprenant, The William H. Miner Agricultural Research Institute, Chazy, NY, 12921, or Clarence Collison, 106 Patterson Building, University Park, PA, 16802. In it state your intention and request an information packet and application for the certification program. Completed applications and requests for exam retakes must be received by July 1, 1986.

Individuals who do not pass all three exams the first time may retake the exams they failed in subsequent years. Exams that were passed will not have to be repeated.

Applicants who are accepted as candidates for certification will be charged $20 when they take the written exam or $10 for each retake and $20 upon successfully passing all three exams.

Upon successfully completing the certification program, the individual receives a certificate suitable for framing, a Master Beekeeper lapel pin, and a Teaching Syllabus and Resource Manual.

★ *MICHIGAN* ★

Honey Bee will be Michigan's Official Insect

With eight votes against it, a proposal to make the honey bee Michigan's state insect has been approved by the House.

The House voted 74-8 Monday to send the bill to the Senate.

Rep. Judith Miller, R-Birmingham, sponsored the measure and said her proposal would honor what she called "the largest work force in the state."

Seventeen other states have official insects.

Preliminary Program for EAS '86 Meeting
32nd Annual EAS Conference — August 6-9, 1986
University of Delaware, Newark, Delaware

	Tuesday, August 5, 1986
9:00a.m. - 5:00p.m.	Short Course, Room 125, Clayton Hall
	Wednesday, August 6
8:30a.m. - 4:00p.m.	Beekeeping Short Course — Room 125, Clayton Hall
10:00a.m. - 10:00p.m.	Conference Registration Desk Open, Clayton Hall
1:30p.m. - 4:00p.m.	Master Beekeeper Written Lab Exam, Dr. Clarence Collison
1:00p.m. -	Commercial Exhibits Open, Room 101, Clayton Hall
1:30p.m. - 5:00p.m.	Registration for Honey, Gadget, Wax, Cooking & Photo Shows
5:00p.m. - 6:30p.m.	Dinner, Pencader Cafeteria
7:30p.m. - 10:00p.m.	Bee movies and Social
7:00p.m. - 8:30p.m.	Delegates Mtg., Dr. Dewey Caron, Rm. 110, Clayton Hall
8:30p.m.	Directors Meeting, Bob Cole, Room 110, Clayton Hall
	Thursday, August 7
	Program of the Day, Dr. Dewey Caron
7:00a.m. - 8:30a.m.	Breakfast
8:30a.m. - 10:30a.m.	Registration for all Shows, Room 120, Clayton Hall
9:00a.m.	Presidents Call to Order, Auditorium, Clayton Hall
9:10a.m. - 9:25a.m.	Invocation, Remarks, Opening Remarks
9:35a.m. - 10:15a.m.	Swarm Orientation in Honey Bee, Dr. Roger Morse, Cornell University
10:15a.m. - 10:30a.m.	Break
10:30a.m. - 11:15a.m.	World of the Honey Bee, Brian Sheriff
11:15a.m. - 12:00noon	To be announced
12:00noon - 1:15p.m.	Lunch
12:15p.m.	Ladies Luncheon and Tour
1:30p.m. - 2:10p.m.	NOSEMA Workshop, Dr. John VandenBerg, USDA, Beltsville, MD.
	Swarming - Management for control, Herman Werner, Wilmington, DE.
	Hive Products - cosmetics, Connie Krochmal, Asheville, N.C.
2:20p.m. - 3:00p.m.	Bee Beard Contest, Robert Harvey
	Hive Products - Wax Ornaments, Roger Hultgren, Holden, MA
	Display presentation - selected program speakers
3:00p.m.	Break
3:30p.m. - 4:15p.m.	NOSEMA Workshop, Dr. John VandenBerg, USDA, Beltsville, MD.
	Cooking with Honey, Ann Harmon, Laytonsville, MD.
	Hive Products - Bavarian Wax, Jim Rady, Anderson, IN.
4:00p.m.	Professional Apiculturists Meeting, Dr. Robert Berthold (Open to Everyone), Room 110, Clayton Hall
6:00p.m. - 7:30p.m.	Barbeque in grove
8:00p.m.	Dancing and Social with DJ, Clayton Hall Lobby
	Friday, August 8
	Program Chairman of the Day, Robert MacIntire
7:15a.m. - 8:30a.m.	Breakfast
9:00a.m.	President's Call to Order, Auditorium
9:05a.m. - 9:35a.m.	To be Announced
9:35a.m. - 10:05a.m.	Honey Bees and Acid Rain, Dr. Matt Scott, Maine Dept. of Agriculture
10:05a.m. - 10:20a.m.	Break
10:20a.m. - 11:00a.m.	Varroa and Acarapis mites, Dr. D. Mike Burgett, Oregon State University
11:00a.m. - 11:30a.m.	A glimpse of beekeeping in China, Dr. Paul Schaefer, USDA, Newark, DE.
11:30a.m. - 12:00noon	Pollination: The Real Cost to Beekeepers, Dr. John Ambrose, NC State University
12:00noon - 1:15p.m.	Lunch
1:30p.m. - 2:30p.m.	EAS Business Meeting, Auditorium
2:45p.m. - 3:30p.m.	Apiotherapy Workshop & Discussion, Charles Mraz, Middlebury, VT.
	Hive Products - Bavarian Wax, Jim Redy, IN.
	Swarm - management for control, Herman Werner, Wilmington, DE.
3:30p.m. - 4:00p.m.	Break
4:00p.m. - 5:00p.m.	Honey Tasting Contest, Ann Harmon, Laytonsville, MD.
	Hive Products - cosmetics, Connie Krochmal, Asheville, NC.
	Hive Products - Wax, Roger Hultgren, Holden, MA.
4:30p.m. - 5:00p.m.	Master Beekeeping Critique Session, Dr. Clarence Collison, Penn State University
6:00p.m. - 7:00p.m.	Cash Bar, Clayton Hall Lobby
7:00p.m. - 10:00p.m.	Awards Banquet, Clayton Hall Banquet Room
	Saturday, August 9
	Program Chairman of the Day, Frank Fulgham
7:15a.m. - 8:30a.m.	Breakfast
9:00a.m.	President's Call to Order, Auditorium
9:05a.m. - 10:15a.m.	Apis florea, Bee Mites and Beekeeping in the Middle East, Dr. Massadegh, N.C. State University
10:15a.m.	Break
10:30a.m. - 11:15a.m.	James I. Hambleton Award Recipient (Lecture)
11:15a.m. - 11:45a.m.	To be Announced
11:45a.m. - 12:00noon	EAS - Next Conference - VPI
12:15p.m.	Lunch
1:30p.m. - 2:30p.m.	Final Check Out of Rooms

Michiana Beekeepers Association Summer Meeting

The MBA summer meeting has been planned for July 11 and 12, 1986 at Notre Dame University, Notre Dame, Indiana. The summer meeting is being hosted by Michiana Beekeepers. It will be held in the Library Conference Center on Campus.

The banquet this year will be a picnic with a tour of the University. The picnic will be held Friday, July 11 at 6:30p.m. The tour will begin at 5:00p.m. The cost is $10.00 per person. Reservations should be made by July 1. For more information contact Chris Dahlke, 4908 Hillandale Road, Sodus, MI 49126, Phone (616) 925-8146.

MBA Program

Friday, July 11, 1986

1:00 - 1:45 "Palletizing and Mechanizing Your Beekeeping Operation for Greater Profits, Efficiency, and Pleasure", Mr. Ed Eisele, Berrien Springs, Michigan
1:45 - 2:30 "Cut-Comb Honey Production", Eugene Killion, Supervisor, Bureau of Apiary Inspection, Paris, Illinois
2:30 - 3:15 "My Experience With Brazilian 'Killer Bees' ", Dr. Harald Esch, Prof. of Biological Science, Notre Dame University
3:30 - 4:15 Honey Queen Report
4:15 - 5:00 Question & Answer
5:00 - 6:00 Guided tour of Notre Dame University
6:30 p.m. Picnic

Saturday, July 12, 1986

9:30 - 10:00 Travelogue
10:00 - 10:45 "Management Tips For The Honey Flow"; "My Beekeeping Experience in Dominica", Dr. Roger Hoopingarner, Prof. and Apiculture Specialist
10:45 - 11:30 "New Developments In The PesticideBee Problem", Dr. Bill Chaney, Extention Entomologist, Purdue University
11:30 - 12:00 Question & Answer
1:00 - 1:45 "Labeling, Packaging and Marketing of Honey", Gerry Hayes, Dadant & Sons, Inc.
1:45 - 2:30 "Stinging Insect Allergy — The Sting Revisited", Dr. Robert W. Claussen, M.D. and Associate Prof. Notre Dame
2:30 - 3:15 Honey Queen Auction
3:15 - 4:00 Honey Check Off System for Michigan, Discussion

★ *INDIANA* ★

Hertha Meyer, Kendallville, has been named Indiana's 1986 Honey Queen. She is a member of FFA & FHA, serving as local president of both chapters. Active in 4-H and Indiana Jr. Horticulture she is a hobby beekeeper and will be promoting Honey & Beekeeping throughout Indiana during the coming year.

★ *ARIZONA* ★

Hunger Group Needs Agricultural VOLUNTEERS

Scottsdale, Az. — "If you're looking for a way to help hungry people in the world and have farming or agricultural skills, we can use you today," says Dr. Tetsunao Yamamori, president of Food for the Hungry. "We have openings at our unique Desert Center in Arizona and in Thailand."

The positions are in Food for the Hungry's Hunger Corps, an all-volunteer part of the Christian agency's international operations. A two-year commitment is needed and volunteers must assist in raising their own support.

"Agricultural specialists are essential for many development projects in Third World countries that follow our relief efforts," Dr. Yamamori stated. "People with these skills play a vital role in providing the helping hand needed to break the cycle of hunger and poverty."

The positions in Thailand are for agriculturalist and agriculturalist/development researcher. Volunteers in these positions will be responsible for working with the local villagers in making the best use of available water and land resources and initiating crops and vegetables suitable for local growing conditions.

The agricultural coordinator needed at the Desert Center will direct and expand the operation of the agricultural and animal husbandry demonstrations at the Desert Center in order to communicate good stewardship and creative approaches to alleviating the problems of world hunger.

For more information on these volunteer positions, contact Hunger Corps director Cindy Pagliasotti at Box E, Scottsdale, Az 85252, or call 1-800-2-HUNGER.

OBITUARY

ARNO WARREN

Arno Warren, 76, passed away April 3, 1986 at his residence in Greensburg, Indiana. Burial was at South Park Cemetary in Greensburg. Mr. Warren was a beekeeper since his youth when he started in the business with his father. He was responsible for teaching many others the skills he aquired. He is sadly missed by friends and relatives.

OBITUARY

MATTHIAS HAUS

Matthias Haus, 68, Salem, Ohio, recently passed away. After retiring from active operation of the Haus Fruit Farm, he had devoted his time to beekeeping. For years his cider mill, home-made sauerkraut operation and apiary had been popular trips for local school classes. He was a director and past president of the Columbiana-Mahoning Beekeepers Ass'n. He is survived by his wife, Edith, four daughters, a son, five sisters and a brother.

★ *NEW JERSEY* ★

The Morristown, New Jersey Beekeepers Association will hold its June meeting on Sunday, June 8 at Foster Field, Morristown, beginning at 2:00 p.m. Featured speaker will be Dr. Robert Berthold, Beekeeping specialist for Delaware Valley College in Doyles-

town, PA. Dr. Berthold will present a program on the superior qualities of beeswax and its many applications. In addition to explaining how to obtain and process beeswax, Dr. Berthold will describe several of its uses, from making waxes and polishes through the role of beeswax in art.

Special emphasis will be placed on making beeswax candles, including preparing the wax, dipping and pouring candles and discussion of antique, metal reproduction and polyurethane candle molds.

The meeting is open, free of charge, to anyone interested in attending. The program will be held in the Visitors' Center of the Fosterfields Living Historic Farm. The entrance to the Center is on Kahdena Road, just off Route 24, west of Morristown. For additional information, contact Stephen Walden, program chairman, at (201) 832-7007.

★ *MINNESOTA* ★

The Minnesota Honey Producers announce the Summer Convention to be held at Fergus Falls Holiday Inn (Junction of I-94 and MN-210) July 17, 18 and 19, 1986. The theme of the meeting will be "Honey Marketing — The Next Four Years". For more information contact: Fred Holte, 2185 W. County Rd. B, Roseville, MN 55113.

★ *CONNECTICUT* ★

On Sunday, June 29, Steve Taber will conduct a QUEEN REARING AND BEE BREEDING INTERNSHIP in cooperation with Dr. Larry Connor. This program will be a limited enrollment program with advanced enrollment required.

In it, Taber will present a complete program detailing the steps to queen production and mating. Queen cell production, mating, storage, and related subjects will be covered. Then, the program will concentrate on simple bee breeding activities which beekeepers can conduct themselves.

Taber's trip to Connecticut is being subsidized by the Beekeeping Education Service. The advanced registration fee is $25.00. Registration at time of the program will be $35. To register for the program contact: Beekeeping Education Service, P.O Box 817, Cheshire, Connecticut 06410. Phone (203) 271-0155. Those requiring lodging for the two days should also contact BES for possible motels in the area.

★ *TENNESSEE* ★

Laura Overbay was crowned the 1986 Tennessee Honey Queen at the Tennessee State Beekeepers Association's annual convention held in Kingsport, Tennessee. She is a 18-year old senior at Volunteer High School where she is active in various clubs and student organizations. Her hobbies include promoting honey, music, travel and sports. Laura has had over seven years experience promoting beekeeping, including three years as the Hawkins County Honey Queen. She started in beekeeping through 4-H and over the years her original two hives have expanded to seven. Laura will be traveling throughout Tennessee promoting the consumption of honey and the beekeeping industry. The Honey Queen Program is sponsored by the Tennessee State Beekeepers Association.□

★ *ILLINOIS* ★

ILLINOIS STATE BEEKEEPERS' ASSOCIATION — Summer Meeting Saturday, June 21, 1986

Volo Bog — Natural Area, 28478 West Brandenburg Road, Ingleside, Illinois.

9:00 - 10:00	Registration
9:00 - 10:00	Self-directed tour of Visitors' Center at bog
10:00 - 10:15	Opening remarks by Alfred Trost Pres. ISBA
10:15 - 10:45	Speaker — Eugene Killion "Beekeeping Around the State of Illinois"
11:00 - 11:30	Guest Speaker — Lee Heine, "Beeswax"
11:30 - 12:00	Lecture on Volo bog area
12:00 - 1:00	Picnic lunch — meat and coffee provided
1:00 - 1:30	Speaker — Laurel Ross or Cheryl Stanley "Adopt a Hive Program" Chicago Nature Center
1:30 - 2:30	Speaker: Dr. Eric Erickson "USDA Bee Lab, University of Wisconsin, Madison.
2:30 - 3:30	Question and Answer period with guest speakers
3:00 - 4:00	Self-directed tour of the Volo Bog
4:00	Adjournment

Bring lawn chairs, insect repellent and a picnic lunch. Meat and coffee provided.□

Bruce . . .

dred supers with sections ready for honey during the winter.

When the honey flow started we put on from three to five supers and had them pretty well finished. Each week we took off the supers and checked for swarm cells. If we found any we cut them and caged the queen until the next visit, then turned her loose.

We had missed a week and were finding some cells. While we were working the bees a colony down the line swarmed. These bees were in a young orchard and the honey house was also in that orchard. Mr. Dodge was watching us and had been complaining that there were no swarms. When these bees swarmed he ran to the honey house and started rummaging around, getting a sheet and a hive to house the bees. When he was gone, his son (who had gotten the idea that swarms cost honey) asked if I could put those bees back in their own hive.

I walked over to where they were clustered and soon saw the old queen in the bottom of the cluster. I picked her out and killed her, then went back to work. I told the boy not to worry, those bees would soon go back "home".

The old man got his sheet opened under the swarm and I could see the bees searching everywhere for their queen. He set the hive down and started donning a veil and gloves. The bees were now in a frantic way so I knew it was time. I walked over to them and got a little switch off of a tree. I tapped the swarm with it and said "You little devils have played hooky long enough, now you better go back home and get to work or you are going to get 'it' ". I had timed it just right; they fell off in chunks and flew back to their hive and ran right inside.

The boy never told his father of what I had done as he wanted to produce honey, not swarms. The old man always thought I had practiced "black magic".

☆ Classified Corner ☆

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

Seven Steps To More Sales From Your Classified Ads

"Classified advertising is a powerful sales tool, 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" comes 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.

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

What do you know about the INTERNATIONAL BEE RESEARCH ASSOCIATION? The many books and other publications available from IBRA will deepen your understanding of bees and beekeeping: and IBRA membership subscription — inclusive of ***Bee World,*** a truly international magazine published quarterly in the English language — will broaden your beekeeping horizons. Details from IBRA voluntary representative H. Kolb, P.O. Box 183, 737 West Main, Edmond, OK 73034 (phone 405-341-0984); or from IBRA, Hill House, Gerrards Cross, Bucks SL9 ONR, UK. 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

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

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

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

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

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

WANTED

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

Wanted Bees or shares on my No. Dakota Location. Call 701-235-5964 after 7:00 p.m. 6/86

Wanted : Used Maxant Combination Uncapper & Spinner. Can buy separate units, Jim Higgins, 3801 U.S. 50, Hillsboro, Ohio 45133. Ph. 513-364-2331 6/86

HELP WANTED

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

ADVERTISING

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

BUSINESS OPPORTUNITIES

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

FOR SALE

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

1,000 package boxes. 72-frame stainless steel and 50-frame variable speed extractors, Cowen uncapper, honey tanks, used deep supers — $10.00, shallows — $8.50. Covers, inners, bottoms. Bob Bennett, Greenville, WI 54915, (414)757-5115. 6/86

200 colonies, 10 frame, with or without supers, M700 Bobcat, forks and bucket. Washington 206-766-6173. 6/86

5 Frame Nucs, Italian and Starline Queens. Package Bees Complete line of supplies. Commercial prices. High Fructose Syrup. Meyer Stingless Goatskin gloves (used by U.S.D.A. working Africanized bees) Wolf Bee Supply, Box 707, Baldwin, WI 54002. PH: 715-684-2095 or 246-5534. 8/86

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

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

Complete 700 hive operation in south western Manitoba including buildings, house, trucks and all related equipment. Write to:

Gleanings In Bee Culture
P.O. Box 97
Medina, OH 44256

For Sale: 300 two story colonies, Queen rearing outfit, 69 two ton truck, Kelly loader, good honey outlets. Best offer. Andrew Hutchison, P.O. Box 6993, Boise, ID 87707 TF

Maxant 30 frame radial extractor, honey sump and pump, Clark bottle-mixer, Clark uncapper plus other honey house items. Total prices for all $2,000 or best offer. Hives, 2 deep-2 shallow, no wax, $40.00 each. 1-603-547-2047. TF

FOR SALE Have 1 to 2 thousand colonies of bees for sale, warehouse with living quarters, three trucks, wax shop, locations. Owner old, retiring. Have pollination for 1,000 colonies. Call 801-798-3921. TF

FOR SALE: 12 fr. motorized 5.5 extractor, 30 gal. elec. double boiler, 5.5 settling tank w/strainer and S.S. uncapp. melter. All like new. 50% catalog price. Ph: (409) 532-5376. Ask for Doc Barfield.

325 med., 100 deeps. New excellent equipment 100 top and bottoms. Must sell. MPLS. Evenings, (612)331-45586/86

BEES & QUEENS FOR SALE

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

3-Frame Italian Nucs, $35.00 each or 3 for $100.00 POSTPAID. Queens 1-10 $6.00, 11-25 $5.25, 26-up $4.75. Box's Better Bees, 410 N. Lide, Mt. Pleasant, TX 75455. Phone: 214-572-0428. TF

Carniolan bees and queens for sale. The Carniolan strain are the alpine strain, from Austrian side of the Caucasian Mountains. The Caucasians are from the Russian side. Both bees are outstanding at honey collecting in North America and are the genial strain. Most of the time they may be worked with only a cigarette for smoke. Queens 1-100 @$8.50 Post paid $29.50, Pick up $25.00, 100 pks. and up, Delivered $32.50. All shipments to be insured for live delivery, Health certificate issued for each shipment. Deliveries over 400 miles will have an additional charge of 5¢ per mile per pack. Carniolan Bee Country, Rt. 4, Box 394, Greenville, AL 36037. 6/86

Discount prices begin May 5th! Royal Italian Queens. Otte Apiaries, Rt 2, Box 99-AG, Karnes City, TX 78118. (512)780-3521 6/86

BEE SUPPLIES FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. Hubbard Apiaries, Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Mich. TF

FOR TOP QUALITY BEE SUPPLIES advice on beekeeping problems, visit your nearest Root dealer and send for your FREE Root catalog. Satisfaction guaranteed. The A.I. Root Co., P.O. Box 706, Medina, OH 44258. TF

ALL WESTERN BEEKEEPERS: Lockcorner supers — tops — bottoms — frames. Complete stock — supplies & equipment. Phone or write for quantity prices. UNITED BEE CRAFT COMPANY, 600 Harbor Blvd., West Sacramento, CA 95691. (916) 371-9340. TF

QUALITY CYPRESS BEEKEEPING SUPPLIES — dovetailed hives and hive parts, beginner's kits, complete supplies. Write: BEE-JAY FARM, Dacula, GA. 30211. TF

RADIAL HONEY EXTRACTORS-5 and 10 frames, Patented, factory made of stainless steel. Gamble's Bee Supply & Candle Company, P.O. Box 7997, Greensboro, NC 27417-0997 USA. Ph. (919) 299-3973, Day or Night. TF

BEE TRANSFER DEVICE — I've trapped thousands. Complete advice and instructions. Only $3.95 plus .50 postage. C.G. Williams, 6505 Floyd Dr., Ft. Worth, TX. 76116. 6/86

FOR SALE: 400 Hive bodies complete with ten 9-1/8 frames. Exc. Cond. Call 315-893-7

SWEET HARVEST BEE SUPPLY
Serving the Black Hills and
Upper Mid West with Quality
From Root, Maxant, Strauser
and Perma Dent Foundation
P.O. Box 4100, Rapid City, S.D. 57709
Phone: 605-393-0545 6/86

100 6-5/8" supers exel. condition $9.50 ea. or quantity discount. Covers $1-$4.00 ea. 50-frame Woodman extractor $550.00, 1971 International Loadstar Bee truck, 18 ft. flat bed $2,000.00. Baldwin, WI 54002 (715)684-2095 or 246-5534. 6/86

HONEYSTRAINER - Approx. 18" x 20" 100 mesh nylon bag. Use with bucket. Easy. Practical. Convenient. Ppd. $3.50 each, 2-up $3.00 each. Instructions. Beckman G, Box 633, Stuart, Fla. 33495 TF

MISCELLANEOUS

RENDERING every day in our all new plant. All honey saved from cappings. Rendering slumgum and old combs. Write for FREE shipping tags and rates. HUBBARD APIARIES, Onsted, Mich. TF

FREE CATALOG Flower seeds, plants for honey production, many other related items. MELLINGERS 2391 Range, North Lima, OH 44452-97316/86

NO HEAT OR ELECTRICITY USED. Uncapping fork (not just a scratcher). No flavor loss and better flavor retention. No burnt fingers or shocks. Honey from dark comb not discolored as with hot knife. $11.00 ea. pp.. Blossomtime, P.O. Box 1015 Tempe. Arizona 85281. TF

MEADMAKERS, WINEMAKERS, BEERMAKERS
Fresh stocks, Fast Service, Free Catalog. O'Brien's, Box 284M, Wayne, IL 60103. 8/86

FREE SINGLES LIST! Send stamp. Kelley, 804 Old Thorsby Road, Clanton, Alabama 35045. TF

Dealership Territories available in some areas. Please contact The A. I. Root Co., P.O. Box 706, Medina, OH 44258TF

POLLEN

FRESH, PURE, Bee Pollen available in 1 pound containers at $8.50 per pound postpaid. 10 pound bulk pack at $7.90 per pound. Large lots, ask for price. Hubbard Apiaries, Inc., Onsted, Mich. 49265. TF

Pure Fresh Bee Pollen in 1 lb. jars $3.60. In 50 lb. bulk — $5.00 per lb. Prairie View Honey Co., 12303 12th St., Detroit, Mich. 48206. TF

CLEAN FRESH FROZEN AMERICAN BEE POLLEN, give us your needs and we will quote prices. Howard Weaver & Sons, Rt. 1, Box 24, Navasota, Texas, 77868, or phone: 409-825-7714. TF

SPANISH POLLEN — NEW PRICES. Excellent taste and quality. 6 lbs $25, 10 lbs $35, 20 lbs $65. Free UPS Shipping. Blossomtime, P.O. Box 1015, Tempe, AZ 85281 TF

WHY PAY MORE? Pure, clean ***BEE POLLEN.*** 1 lb. Packages $4.00, Min. 5 lb., bulk ***$3.50/lb.*** prepaid. ***FREE SHIPPING.*** Stakich Bros., Inc. 4128 W. Orchard Hill, Bloomfield Hills, MI. 48013. 313-642-7023. 11/86

BEE POLLEN fresh frozen from Calif. Mts. No insecticides, tested 25% protein. Cleaned, 50-lb. boxes. Top qual., Ex taste. UPS collect $200/box. Quotes on larger quantities or feed pollen. (714) 380-8884 eves. 5/86

ROYAL JELLY

PURE FRESH Royal Jelly, 2 oz. bottle, $13.50 pp.; 1 lb. $90. Prairie View Honey, 12303 12th St., Detroit, MI 48206 TF

WHY PAY MORE? 100% Pure ***Royal Jelly.*** 2 oz.—***$15.00,*** 1-lb.—***$100.00*** prepaid. ***FREE SHIPPING.*** Stakich Bros., Inc., 4128 W. Orchard Hill, Bloomfield Hills, MI 48013. 313-642-7023. 11/86

BOOKS

INCREASE SALES! Learn to fascinate customers with amazing stories, folklore and traditions about bees. Book packed with stories and lore. Easy, how-to instructions for weaving bee tales and bee lore into your sales pitch. $6.50 ppd. Money back guarantee. BEE LORE, Box 2020-G, Mt. Pleasant, MI 48858 6/86

"Bee Pollen The Miracle Food, Source of Youth, Vitality and Longevity." "Propolis The Eternal Natural Healer." For free literature and details send SASE. Murat Publishers, 2132 N.W. Eleventh Ave. Miami, Fla. 33127 TF

A GREAT GIFT! ***A Bee Sees,*** a fable by George Anderson, is clean adult fiction set in a bee hive, and all of the characters are bees. Researched apiarian facts throughout. Read about queens, workers and drones in a mythical hive. Surprise ending. Satisfaction guaranteed or money back. Send $5.95 total to ALTERNATING CURRENTS, Dept. G, Box 2121, Jamestown, NC 27282 6/86

"Bees Don't Get Arthritis", says the Washington Post, "Should be required reading for the 50 million arthritics." Send check for $9.95 p.p. to Judi Copping, Box 235, Chester, VT. 05143 6/86

HONEY WANTED

BEEKEEPERS TAKE NOTICE — We cannot guarantee honey buyer's financial responsibility and advise all beekeepers to sell for CASH only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

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

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

COMB HONEY White to water white, 10 oz. square cut comb. Send sample and price to: Moorland Apiaires, 5 Airport Dr., Hopedale, MA 01747. TF

HONEY FOR SALE

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

HONEY IN 60's FOR SALE. Bedford Food Products Co., 209 Hewes St., Brooklyn, New York 11211. Phone: 718-EV4-5165, TF

Index to Display Advertisers

A.I. ROOT ADOPTS NEW TRADEMARK

For the third time in it's history, The A.I. Root Company, publishers of ***GLEANINGS IN BEE CULTURE***, has changed it's trademark. The first Root trademark appeared in the 1890's and had as it's focal point the honeybee and a clover leaf representing the relationship between the honeybee and it's prime source of nectar, the legume.

ROOT

In the early 1920's the script Root trademark was introduced and has been used to this time.

In keeping with the cleaner graphics and simpler design of modern marketing, the new Root trademark illustrates the Skep, the symbol of beekeeping almost throughout it's long history. The Skep has been used since man began making hives for bees, and to some extent is still in use today. Rev. Langstroth's invention of the modern, moveable frame beehive was being largely ignored when A.I. Root encounted his first swarm of bees and caught "bee fever". He was the first to commercially produce the Langstroth moveable frame hive and offer it for sale to beekeepers throughout the world. He was also a staunch defender of the Langstroth patent, as later patents attempted to infringe on it. Thus, the Skep symbolizes the beekeeping heritage of the 117 year old firm as it proceeds into the future.□ □ □

TRADE MARK
THE A.I. ROOT CO.
MEDINA OHIO
U.S.A.

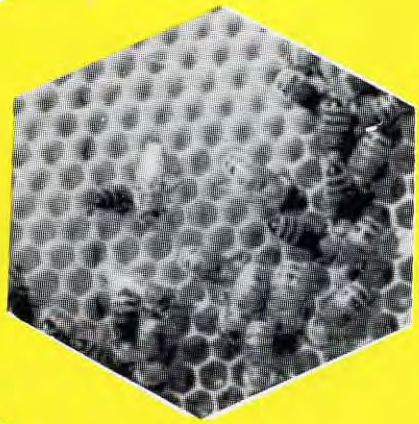
Root QUALITY

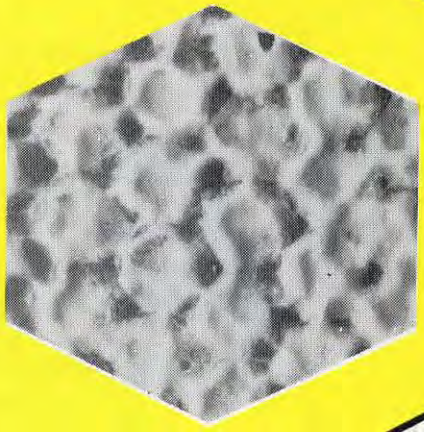
ROOT
QUALITY

The Basics of Good Beekeeping is Good Foundation

Root Wire-Ply Foundation has —

- ✓ Superb Cell Definition, for fast build-up
- ✓ Superior Strength for Durability
- ✓ Fast Delivery from any Branch or Dealer





Get Started Now, Call or Write Any of these A.I. Root Branches

DICK KEHL
P.O. Box 706
623 West Liberty St.
Medina, Ohio 44258-0706
Phone: 216/725-6677
Telex: 753856 Root UD

EVELYN SULLIVAN
P.O. Box 6
1028 Third St.
Council Bluffs, Iowa 51502-0006
Phone: 712/322-8438

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537 South Flores St.
San Antonio, Texas 78204-0153
Phone: 512/223-2948

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Athens, Georgia 30603
Phone: 404/548-7668

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Or any of our Hundreds of Nationwide Dealers . . .