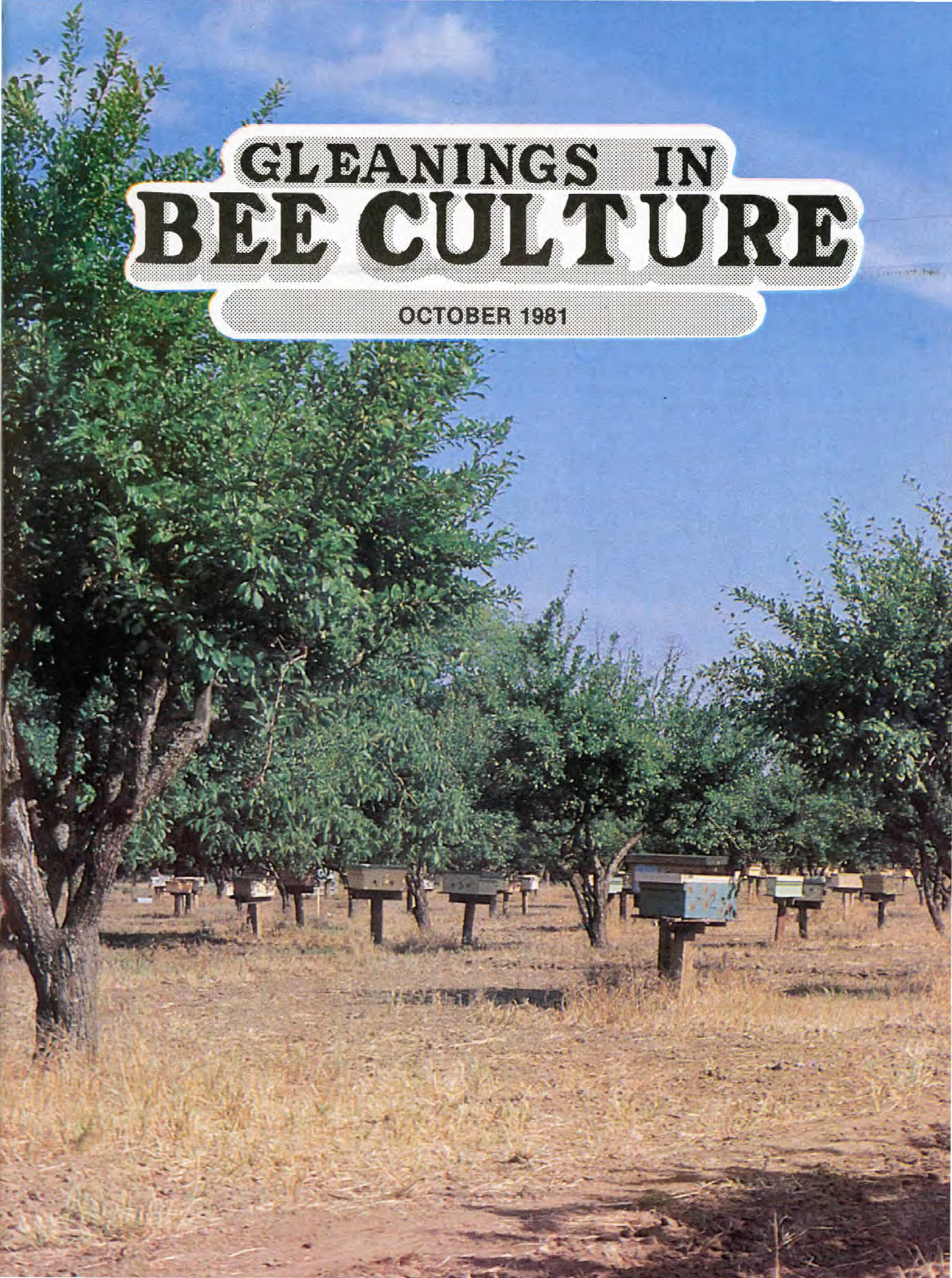


GLEANINGS IN BEE CULTURE

OCTOBER 1981

We know two sure-fire ways to increase the value of your honey crop...

A scoopful of money in every jar is dramatic . . . foolish, illegal, unsanitary, wasteful and very costly . . . and then we unveiled Dadant's brand new HONEY BOTTLER and solved all of those problems with one bright stroke.

Double-walled construction in satin-finish stainless steel inner and outer tanks for lifetime appearance and food-quality honey handling . . . No rust . . . No paint . . . No plating to chip or peel.

300 lb. capacity with stainless steel hopper for 60-lb. cans or direct filling from storage tanks. Bottom drain, brass fittings and 1'' brass honey bottling valve.

Water Sight Glass allows operator's constant view of the water level between the tanks. 1½'' Water Inlet and 1'' Water Drain plus a choice of options because we thought you'd like a choice, including: Honey Thermometer to read the actual honey temperature and Complete System for Stirring and Blending.

For a closer look at Dadant's Bottler and our complete line of bright ideas for Honey Handling, see your nearest Branch Location or ask your Dealer.

Dadant & Sons, Inc.
HAMILTON, ILL. 62341
Phone 217-847-3324

Shop at your nearest branch or dealer location and save on freight

BRANCHES

RD. 2 - Rt. 17c
P.O. Box 267
Waverly, N.Y. 14892
Phone 607-565-2860

P.O. Box 7996
2534 Airways Drive
Fresno, Calif. 93747
Phone 209-292-4666

1169 Bonham Street
P.O. Box 146
Paris, Tex. 75460
Phone 214-784-6145

P.O. Box 270
190 Mary St.
Umatilla, Fla. 32784
Phone 904-669-2622

P.O. Box 331
1 Mi. E. off Hwy. 16
Watertown, Wis. 53094
Phone 414-261-5363

P.O. Box 2411
2425 Carroll Avenue
Lynchburg, Va. 24501
Phone 804-846-0666

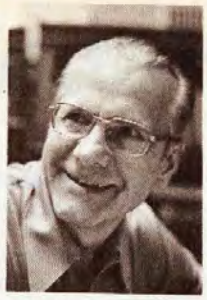
1318 - 11th St.
P.O. Box 575
Sioux City, Ia. 51102
Phone 712-255-3232

P.O. Box 397
162 Tillman St.
Hahira, Ga. 31632
Phone 912-794-2785

3603½ N. Main
Wayland, Mich. 49348
Phone 616-792-9540

118 YEARS FOR PROGRESS IN BEEKEEPING

John Root



Lawrence Goltz

Lawrence Goltz, Editor
THE A.I. ROOT CO., PUBLISHERS
P.O. BOX 706
MEDINA, OHIO 44256

John Root, Associate Editor
Dr. Roger A. Morse, Research Editor
Joan Stopke, Advertising Mgr.
Rebecca Hall, Sub. Mgr.

Subscription Rates: United States subscribers, one year, $9.00; two years, $17.75. Single copy $1.10. Other countries including Canada, Pan American countries and Spain (U.S. Currency only). $3.25 per year additional for postage. Published monthly. Discontinuance: Subscription stopped on expiration. Change of Address: Give your old as well as the new and print the name to which the journal has heretofore been addressed. Remittance should be sent by post office money order, bank draft, express money order or check.

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

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

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

Advertising rates and conditions will be sent on request.

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

Second Class Postage Paid at Medina, Ohio

POSTMASTER: Send Form 3579 to
623 West Liberty Street
P.O. Box 706
Medina, Ohio 44258
Phone: (216) 725-6677

COVER STORY

Queen mating yard of the Taber Apiaries of Vacaville, CA. Two nucs per box placed on posts for ease of work. Nucs are painted different colors and are placed in staggered rows to assist flying queens and workers in finding their hive. The fruit trees (prunes) also provide landmarks and shade.

Gleanings In Bee Culture

October 1981 (ISSN 0017-114X) Vol. 109, No. 10
Created to Help Beekeepers Succeed
108 Years Continuous Publication by the Same Organization

CONTENTS

The Use Of Honeybee

By KEITH K. DAELLENBACH
Albany, Oregon

About the Author

Keith Daellenbach is a thirteen year old eighth grader attending North Albany Junior High School in Albany, Oregon. He has five colonies of bees and is active in a 4-H beekeeping club. His hobbies are hunting, trapping, fishing, jogging, and beekeeping.

This essay by Keith was judged the winner of the 1981 American Beekeeping Federation 4-H Club Essay Contest.

HONEY, PROPOLIS, royal jelly, pollen, beeswax, and venom are honeybee products that are used in medicine. This report will detail some of their applications.

The Medical Uses of Honey

Medical applications of honey go back thousands of years. It was used by the Egyptians, Chinese, Greeks, and Romans. It was also used in the European countries during the Middle Ages. During World War I, honey was used by German surgeons as a medical application. It is frequently used in Europe as a surgical dressing. (1) It is only in the United States that honey has been neglected as a healing agent.

Dr. W. G. Sackett, a bacteriologist of the Colorado Agricultural College at Ft. Collins, conducted scientific experiments using honey to find if it could be the carrier of diseases. He concluded that the typhoid fever germ was killed in no more than 48 hours and the dysentary germ was killed within ten hours. Of the other seven germs that were tested, only one germ (*coli communis*) lasted until the fifth day.

Dr. A. P. Sturtevant, another bacteriologist, concluded that honey has a distinctive property of being able to absorb moisture. Therefore, when a bacteria contacts honey, its moisture is absorbed and the bacteria dies from dehydration. Also, because of the high sugar density and slight acidity of honey, all nonspore-forming organisms that cause human disease cannot live in it. It has been used to treat wounds, sores, ulcerations, and surgical incisions because of its antiseptic properties. Dr. Bodag Beck wrote, "If honey is spread on wounds, great quantities of lymph flow to the area and destroy the infectious germs as well as cleanse and promote healing." Honey has also been used by drug companies as a sweetening agent in medications such as cough syrup.

Bee Venom In Medicine

Bee venom, which consists of eight compounds (histamine and hyaluronidase being most important), is used to treat people who are violently allergic to bee stings. A main drawback to therapy is the cost and availability of venom. The cost ranges from $100.00 to $500.00 for the first year. (2) Treatment for immunity to bee stings is done using patch tests and the process of desensitization, which is done in this way: The doctor blocks off an area of the skin and pricks it with a sterile needle, then administers the venom. The pricks that become inflamed are the ones the patient is allergic to. He will then innoculate the person with the allergic substance, first in small doses, increasing with time. After weeks or months, the process is complete and the body has built up immunity to the sting of a honeybee.

Venom is collected on a ramp about 30 by 16 inches which has exposed electric wires crossing about every inch. Under the wires is a silicone cloth. The ramp is placed in front of the hive so the bees have to land on it. An automatic reflex causes the bees, which are shocked slightly, to sting the cloth, thus depositing their venom. The venom is then dried, packaged, and sent to a drug laboratory.

In some places, bee venom has been used to treat arthritis, rheumatism and gout. Some people feel this has caused miraculous cures.

Pollen In Medicine

Pollen is used in medicine to increase the antibodies in the body in the treatment of hay fever. The desensitization process described earlier is used. Pollen is collected by traps placed near the hive entrance. It is scraped from the bee as she enters through a special wire screen and falls into a removable tray. The pollen is then spread in layers and allowed to dry.

Pollen can also be gathered by hand, but this is a slow and costly process and will not be discussed in this paper.

Among the pollens in demand by drug companies are sages, box elder, elm, maple, ash, oak, and especially ragweed. (3)

Beeswax In Medicine

"The pharmaceutical industry uses beeswax in preparation of salves, ointments, cerates, camphor ices, pomades, and other preparations." (4) There are two main types of beeswax used in medicine: white (bleached) wax and yellow wax. Both are used as stiffening agents in ointments. White wax is sometimes used to change the melting point of the ointment.

Royal Jelly In Medicine

Royal jelly is produced in the pharyngeal glands of the young worker's head. It is milky colored and contains much nitrogen. D. Lavie reported that it contained antibacterial substances as did pollen, propolis, and honey.

Dr. J. Vittek, a Czechoslovakian professor, performed an experiment using 300 rabbits with bone defects. He was testing the healing effect of royal jelly on the rabbit's bones. To one group he did nothing, to a second he used a bone extract serum, and to the third he administered royal jelly. The rabbits in the third group healed fastest with no scars. The first and second groups eventually healed but

Products In Medicine

with scars. (5) This treatment could possibly be used on humans.

The jelly is drawn by suction into a collecting tube. It is then refrigerated.

Propolis In Medicine

In Denmark as well as other European countries, propolis has been found to be a natural antibiotic recently. There has been a steady demand for it. It sells for about $2.50 per ounce.

It should be kept in small pieces when gathered and not rolled into a ball as this is not acceptable to most buyers.

In West Germany, propolis is used by Pearson & Company to make a product called Propolishinvasogen. It was used in hospitals on 58 cases for its antibiotic properties, with good results. It has also been used for dressing wounds and burns.

Home Remedies With Honeybee Products

In the Middle Ages and frontier days of America, there was a scarcity of qualified doctors. Often wounds had to be treated before a doctor could be seen. Consequently, a rash of remedies came into use. Some of them worked while others were useless. Following are some of them.

Arthritis: Drink a mixture of honey, moonshine, and vinegar. (6)

Peptic Ulcers: Take a teaspoon of honey half an hour before mealtime. (7)

Hoarseness of the throat: Use sourwood honey and some alum. (8)

Laxative: Use three tablespoons a day. (9)

Sedative: Drink before going to bed: one cup of chamomile tea, one teaspoon of honey with mint leaves. (10)

Honey for a hangover: Use six teaspoons of honey every 20 minutes. (11)

Honey and vinegar: This will cure many ills. (12)

In conclusion, research through the years has developed important uses of honeybee products in medicine. Today many people are benefitting from past testing. Research continues in this field. The future outlook for the use of bee products in medicine looks bright.

Bibliography

(1) Aebi, Ormond and Harry, *Mastering the Art of Beekeeping,* Vol. 2, Santa Cruz, Unity Press, 1979, pp. 195, 221.

(2) Aebi, Ormond, World record holder of wild honey production, from California, to Keith Daellenbach, March 12, 1981.

(3) The Allergy Foundation of America, *Allergy: Its Mysterious Causes and Modern Treatment,* New York, Grosset and Dunlap, 1967, pp. 20-21.

(4) Churchill, James E., "Summer Jobs for Trappers", *Fur, Fish and Game,* March, 1981, pp. 12-13.

(5) Crane, Eva, *Honey: A Comprehensive Survey,* London, Morrison and Gebb, Ltd, 1976, pp. 262-263, 388-389, 451-454, 457-461.

(6) Daellenbach, Myron and Irene, Grandparents from Wisconsin, to Keith Daellenbach, March 18, 1981.

(7) Hooper, Ted, *Guide to Bees and Honey,* Hamshire, England, Rodale, Press, Inc.,1976 pp. 254-256.

(8) Hoyt, Murray, *The World of Bees,* New York, Coward McCann, Inc., 1965, pp. 96, 181-186, 212, 231-239, 243-248.

(9) Langstroth, Dadant, and Dadant, Edited by Grout, Roy A., *The Hive and the Honey Bee,* Hannibal, Missouri, Standard Printing Co., 1963, pp. 365-366, 401-402, 436, 502.

(10) Mellinger, Marie B., *Foxfire Book 2,* New York, Anchor Books, 1973, pp. 28-31.

(11) Miller, C.C., Dr., *Fifty Years Among the Bees,* Medina, Ohio, The A.I. Root Company, 1915, pp. 312-315.

(12) Parkhill, Joe, *The Wonderful World of Honey,* Lenexa, Kansas, Cookbook Publishers, Inc., 1977, pp. 144-150.

(13) Root, A.I., *The ABC and XYZ of Bee Culture,* Medina, Ohio, The A.I. Root Company, 1975, pp. 307, 371, 600, 541, 570, 572.

(14) Whitecombe, Harry J. and Douglas, John Scott, *Bees are my Business,* New York, Van Rees Press, 1955, pp. 36, 42,46, 96-101, 239-241.

(15) Wigginton, Brooks E., *The Fox Fire Book,* New York, Anchor Books, 1972, pp. 230-231, 234, 236-237.

(16) Yunginger, John W., M.D., "The Sting Revisited", *The Journal of Allergy and Clinical Immunology,* Vol. 64, July, 1979, pp. 1-2.

Footnotes

1. Joe Parkhill, *The Wonderful World of Honey,* Lenexa, Kansas, Cookbook Publishers, Inc., 1977, p. 145.

2. John W. Yunginger, M.D., "The Sting Revisited", *The Journal of Allergy and Clinical Immunology,* Vol. 64, July, 1979, p. 1-2.

3. James E. Churchill, "Summer Jobs for Trappers", *Fur, Fish, and Game,* March, 1981, p. 13.

4. L.L. Langstroth, Charles Dadant, and C.P. Dadant, "Other Uses of Beeswax", *The Hive and Honeybee,* Ed. by Roy Grout, Hannibal, Missouri, Standard Printing Company, 1963, p. 436.

5. Ibid. 1, p. 146.

6. Brooks E. Wigginton, *The Fox Fire Book,* New York, Anchor Books, 1972, p. 231.

7. Ormond and Harry Aebi, *Mastering the Art of Beekeeping, Vol. 2,* Santa Cruz, Unity Press, 1979, p. 221.

8. Marie B. Mellinger, *Foxfire Book 2,* New York, Anchor Books, 1973, p. 31.

9 Dr. C.C. Miller, *Fifty Years Among the Bees,* Medina, Ohio, The A.I. Root Company, 1915, p. 314.

10. Ibid. 1, p. 149.

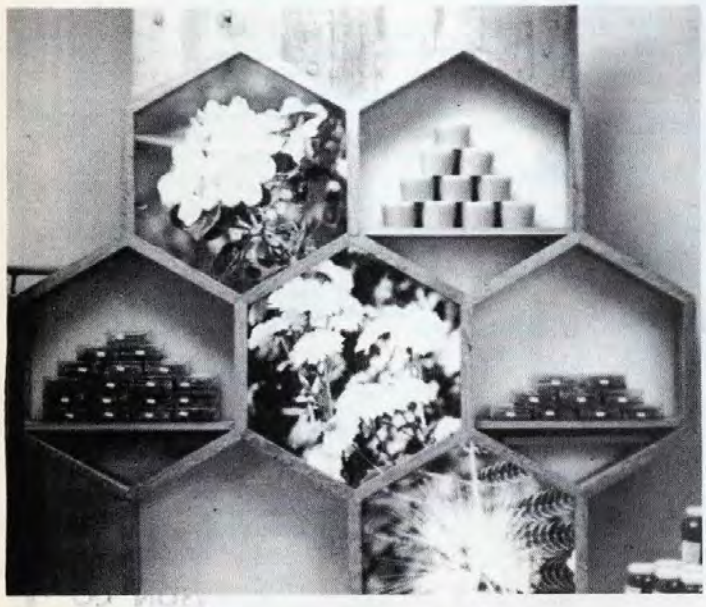
11. Ibid. 1, p. 146.

12. Murray Hoyt, *"The World of Bees",* New York, Coward McCann, Inc., 1965, p. 185.

Eastern Apicultural Society

EAS 1981, drew hundreds of beekeepers from the eastern United States to the campus of Rutgers University in New Jersey between August 5th and 8th. The annual affair will be held in Morgantown, West Virginia in 1982.

Above, left and right and below, left are displays of bees and honey while on the lower right is a picture of an eight sided observation hive provided by the New Jersey Beekeepers Association. A unique feature is a screened in fly space above the combs. □



Monthly HONEY Report

LAWRENCE GOLTZ

September 10, 1981

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

Wholesale Extracted — **Reporting Regions**

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	1	2	3	4	5	6	7	8	9
60 lbs.(per can) White	42.00	33.00	35.40	32.20		38.50	32.00	33.50	34.00
60 lbs. (per can) Amber	42.00	30.00	33.50			36.00	29.75	34.25	33.40
55 gal. drum (per lb.) White		.55	.57	.56		.57	.54	.55	
55 gal. drum (per lb.) Amber		.46	.54	.54		.56	.52	.53	
Caselots — Wholesale									
1 lb. jar (case of 24)	26.50	24.50	25.20	22.80	34.80	23.00	23.80	21.50	24.00
2 lb. jar (case of 12)	25.00	23.00	24.20	21.50	33.60	22.00	21.95	19.85	22.30
5 lb. jar (case of 6)	29.00	26.95	26.25		42.00	24.00	24.50	24.10	25.50
Retail Honey Prices									
½ lb.	.90		.88	.75		.78	.79	.80	.97
12 oz. Squeeze Bottle	1.35	1.25	1.35	1.15	1.50	1.25	1.45	1.30	1.18
1 lb.	1.35	1.45	1.41	1.30	1.75	1.40	1.49	1.40	1.38
2 lb.	2.55	2.50	2.50	2.45	3.45	2.45	2.79	2.45	2.58
2½ lb.	3.15		3.49		4.50	2.95	3.05	3.29	3.65
3 lb.	4.00	4.25	3.75		4.75	3.60		3.65	4.09
4 lb.	5.00	4.85	4.55	4.50		4.75	4.20	5.00	
5 lb.	6.00		5.50			5.35	5.10	5.85	5.94
1 lb. Creamed			1.45			1.50	1.65	1.48	1.58
1 lb. Comb	1.75		1.85		1.85	1.65	1.85	1.55	
Round Plastic Comb	1.50		1.65			1.85	1.65	1.45	
Beeswax (Light)	2.00	1.95	1.95		1.85	1.95	1.90	1.90	1.85
Beeswax (Dark)	2.00	1.90	1.90		1.75	1.90	1.85	1.85	1.75
Pollination Fee (Ave. Per Colony)	30.00		22.50				20.00	16.00	

Misc. Comments

Region 1

Spring nectar flows were very good but summer brought a real slump. Many dependable plants failed to yield much nectar. Sumac and basswood gave very little honey and clover did well in only a few areas. Hoping goldenrod will help to salvage a not very good year. Spray damage was very bad in most states but Connecticut had very little loss due to an effective campaign to educate the people to the danger of spraying honeybees.

Region 2

Reports vary in the amount of honey produced in Maryland. Beekeepers along the shoreline did very well, while those inland did not do as well. Rain is needed. Honey sales are going well at both retail and wholesale. Customers glad to purchase local honey, even though they pay slightly more. Bees in western Pennsylvania have had a good to

average year. Fall honey flow strong in West Virginia and prospects are good in other states.

Region 3

Northern Ohio suffering from excessive rainy weather during summer honey flow and early in the fall. Central and southern Ohio may fare better. Honey sales very good at both retail and wholesale in Indiana. Little or no complaint about increased prices. Many beekeepers in Indiana say this is the worst year ever. The honey crop is a complete failure. Most colonies of bees will have to be fed to enable them to survive. The honey crop in Illinois is very poor. If the fall flow is poor there will be an urgent need of fall feeding. Soybeans did not yield well and what was obtained is very high in moisture. Some bees are filling supers in southeast Wisconsin and the fall flow should be good. Comb honey supers showed poor finishing.

Region 4

Crop is very short in most of Minnesota due to cloudy, rainy weather for prolonged periods through July and most of August. The rains in late August are making it difficult to reach bee yards to remove honey. Honey is thin in body, and will need exposure in hot rooms and to dehumidifiers to lower moisture content. Broodnests are very short on honey and may cause the loss of colonies if wintering is attempted. Minnesota beekeepers who have had a decent crop were in the basswood areas. Southwest Iowa honey producers have almost completed extracting by

(Continued on page 556)

From America's Land of Milk and Honey

$UGAR $AVINGS & STAINLESS STEEL

Now Available for Immediate Delivery
10,000,000 Pounds of Sugar and Fructose

Our special purchase of 3 million pounds of granulated sugar and 7 million pounds of high fructose syrup insures truck-or tanker-load delivery, anywhere in the United States and Canada at substantial savings.

For the best wholesale price quote on any bee-feeding sweetner supplies.

Call toll-free:
Nationwide-1-800-356-5333
Wisconsin -1-800-362-5866

Prices Quoted on September 1, 1981:

100 lb. bags granulated sugar $24.00 delivered.

If you have 70 empty drums, we can deliver fructose to your yard at the following prices:

55% High Fructose Syrup $16.00 delivered nationwide. (77% solids)

42% High Fructose Syrup $14.00 delivered nationwide. (71% solids)

Introducing our "Nectronic" Family of Premium Processing Equipment

"Nectronic" 9000
120 Frame Extractor

Unique features include:

- Massive 14 gauge stainless steel tank, cover, and bridge.
- Compact double-ridge tank design, with 3" lower height for easier loading and unloading.
- Narrow double-channel central bridge gives 35% larger cover openings for maximum reel access.
- Maintenance-free power transmission system and solid state electronics sealed integrally in motor bridge.
- Full ¼ h.p. larger size-for-size motors, totally enclosed and fan-cooled.
- Designed in compliance with U.S.D.A. and N.S.F. food industry sanitation standards.
- Available in 120, 60, and 44 shallow frame capacity (100, 60, and 24 deep frames).
- Full two year guarantee on all workmanship, construction, and electronics.

Solid-State Auto-Reset Cycle Timer

Solid-State Electronic Control with Integral Electronic Dynamic Braking and Motor-Protection Circuitry

"Nectronic Systems Engineering"—creating new standards of perfomance in premium processing equipment!

Honey Bear

Terramycin

Fumidil-B

Jar

Honey Bear

Introducing our best decorated, hairiest honey bear ever! The hand-painted eyes and nose really stand out, but after they're sold, the unique molded-in sealing lip will keep your honey in the bear—not on the shelf! (Prices include yellow long-tip spout and cap.)

50	bear case	$12.95
250	bear case	$54.95
1,000	bear case	$185.00
5,000	bear case	$175.00/M

Honey Jars

1 lb. honey jars including caps
$3.99/case of 24

Fumidil-B by Abbot Labs

½ gram $6.00 each.
9.5 gram $50.00 each.
(Canadians—call for special wholesale price.)

Terramycin by Pfizer

TM-25	6.4 oz packet		$2.25 each
	$2.00/10 pkts.—up	62 pkts./pail	$112.00
TM-100	4 oz. packet		$4.25 each
	$4.00/10 pkts.—up	60 pkts./pail	$220.00

Beeswax

We offer top market price for any quantities of beeswax year round.

Light Beeswax	Dark Beeswax
$1.95 outright	$1.85 outright
$2.00 45 day basis	$1.90 45 day basis

Dedicated to marketing premium quality supplies at wholesale prices, prices quoted are based on inventories on hand and may change without notice. Call our toll-free hotline for your best quotes.

Nationwide: 800-356-5333
Wisconsin: 800-362-5866 608-273-4444

Write to reserve your copy of our 1982 Supply Source Book.

FIELDS OF AMBROSIA
DIVISION OF
GRISWOLD ENTERPRISES, INC.

6810 Watts Road • Madison, WI 53719
(608) 273-4444

Strictly Backlot

By CARL CALLENBACH
135 College Avenue
Elizabethtown, PA 17022

SOMEWHERE ATOP Tussey Mountain, carved mysteriously in the trunk of a gnarled white pine, it is written: when the squash bugs have devoured the last butternut squash vine, it is time to announce the **Third Annual How I Heroically Caught a Swarm Contest**. Here goes!

Question: Since this is the third contest, there must have been some previous winners, right?

Answer: Yes. Previous winners of the **How I Heroically Caught a Swarm Contest** have been, in 1980, Mr. J.J. Bryant of California, Mrs. Sylvia Inoue of Massachusetts, and Todd Planten of New Jersey; in 1981, Derek G. Brand of Essex, England, and Bob Seger, of West Chester, Pennsylvania.

Question: What exactly did each win, other than fame and the notoriety of having a tale of personal valor printed in this column?

Answer: A can of baby talcum powder, a name brand to be sure, but the smallest can of powder available at the local discount drug store.

Question: Why?

Answer: Why not? But let me explain, anyway. In a column in 1979, another good year for squash bugs, as I remember, I fantasized and answered a couple of letters from backlotters hiding out someplace in my head. The first:

Dear Carl:
My husband, an antique backlotter if there ever was one, smells like an old billy goat when he comes in from working his bees. I know it's the smoker and nothing inherent in the man himself. He says he can't help it; it's smoke or be stung. And he's tried burlap, corn cobs, old binder twine, and shavings. Corn cobs aren't too bad, but they're not fresh mountain air, if you know what I mean. Anyhow, I thought maybe you would know of something new on the market, something that wouldn't smell, or if it did, it would smell like rum-scented baby talcum powder.
Mrs. A. K. (Poughkeepsie, N.Y.)

The other letter, which I reprinted last September when announcing the **Second Annual How I Heroically Caught a Swarm Contest** chronicles the birth of the annual contest. I believe I wrote in the same article that there were few cigars:

Dear Carl:
I'm very concerned and disturbed about how most articles and stories in bee magazines treat catching swarms so **casually**. If it keeps up, everybody will get into the act, like fishing. What I'm trying to say is that the general public is in danger of losing the mystique usually associated with hiving a swarm. Only yesterday, I was out catching a swarm and the few people who crowded around didn't offer one "He must be crazy." In fact, a young woman said, "I read somewhere that swarms are usually quite passive and easily hived." Then she yawned and returned to her secretarial post at the local meat packaging plant. Just two years ago I would have drawn maybe fifteen or twenty anxious people with plenty of **Ohs** and **Ahs**. One year two people fainted (in the original fantasy I wrote that 'two women fainted' and heard from more than two women who definitely would not have fainted). Yesterday two were talking about missing their favorite game show on the tube. What I want to know is how we can get the old bravado back into hiving a swarm? How can we make capturing a swarm HEROIC like it used to be in the good old days?
MR. K.H. (Portage, WI)

I'm going to include my response to Mr. K.H.'s letter:

Dear Mr. K.H.:
I entirely agree with you. Hiving a swarm isn't what it used to be. Not that I want a drum and bugle corp or even too much applause. But it is time something is done about it! That's why today I'm initiating the first **How I Heroically Caught a Swarm Contest.** I'm counting on a lot of backlotters out there feeling the same way you and I do, Mr. K.H., and anyone out there wishing to enter the contest should have his or her story written and mailed to me before December 1. I hope to include the winner's story (all or in part) in a future column. Entrants should remember that the sole criteria for judging, as you might have guessed, is how heroic the tall (or short) tale is! The prize as you may not have guessed, is a can of baby talcum powder.

Question: If we win, do we have to accept the talcum powder?

Answer: Yes, or you risk default of your fame and notoriety. J.J. Bryant, for example, passed his talcum powder on to his grandchild. I believe Mr. Brand placed his trophy on a living room mantle. Whenever members of his family doubt his valor, authority, or veracity, he points to the can of talcum powder.

Question: Will you review the rules. I note that you said entries must be in by December 1. But the squash bugs took an extra month to devour the butternut squash vines and delayed announcement of the contest for this year.

Answer: January 1 is fine. And that's the only rule that I know of: have your entry in by January 1. Except that the panel of judges have promised to accept only limited bribes.

Question: Do you have any hints about what it takes to be a winner?

Answer: Several months ago Larry Goltz, Editor of *Gleanings*, forwarded to me an early entry from a reader who sent his tale to the *Gleanings* office. He noted: "Here's an entry for your **liars** contest." I suggest that "liars contest" does not have the righteous ring of, say, "How I Heroically Caught a Swarm Contest," but it's to the point: A flair for lying does help! *A Handbook to Literature* (Thrall, William Flint, and Hibbard, Addison; Revised and Enlarged by C. Hugh Holman, New York: The Odyssey Press, 1960) defines a tall-tale as a "kind of humorous TALE common on the American frontier, which uses realistic detail, a literal manner, and common speech to recount **extravagantly impossible happenings**, usually resulting from the **superhuman abilities** of a character" (emphasis added). Examples: Tales about Paul Bunyan, Mike Fink, and Davy Crockett.

Another source of inspiration would be those columns which included the entries of previous winners. I believe the tales by Brand and Seger will be hard to top (March 1981; April 1981).

Swarming season's over. Chew up your experiences, add some **extravagantly impossible happenings,** give yourself some **superhuman abilities,** write them down and send them to me before you choke!

IAAD Meeting

By CYNTHIA MANUEL
Apple Creek, Ohio

A GROUP OF dedicated beekeepers, many of whom had experience in beekeeping in Third World countries, gathered August 10-21 on the campus of the Agricultural Technical Institute of Wooster, Ohio for an intensive seminar on the potential of development apiculture. The organization sponsoring the meeting was the International Agency for Apiculture Development. IAAD has been a focal point for information on international beekeeping and a coordinator for individual involvement in that area of bee culture.

The seminar drew a cross section of beekeepers — those with much experience, and those just beginning, individuals from the Peace Corps, well known professionals with interest in international beekeeping projects, scientists, and those wondering if new ideas from international beekeeping might be applied in the United States. Topics under discussion included aspects of Central American, South American, and African beekeeping, pesticides, tropical bee diseases, the varroa mite, *Apis cerena* — the Asian bee, Meliponiculture, the danger of imports/exports, equipment selection, and the Kenya top bar hive.

Dr. James Tew and Marc Caputo, of Agricultural Technical Institute, assisted by student Emile Houle, led the instruction during the first week for those individuals with less beekeeping experience. It was for some a crash course in everything from queen rearing to bee stings. The second half of the symposium was under the guidance of Professor Gorden Townsend and Rodney Dillinger. Predictably, the discussion of bees and beekeeping continued beyond the limits of the presentations.

The potential for raising the standard of living in rural areas of Third World countries by introducing a modernized system of apiculture is as yet not fully realized. Such apicultural programs are based on the involvement of local beekeepers. They are a combination of the area's traditional methods of keeping bees with more modern equipment and management concepts.

In Kenya, for example, a special program has been developed through aid and assistance from Canada. The Kenya top bar hive (actually developed in England) was adapted for use in this environment, taking into consideration the characteristics of the African bee, the limited resources of the local farmers, and the existing system of management.

During the first week of the seminar informal sessions in the apiary at ATI introduced some of the participants to beekeeping. R. Dillinger (without veil), Executive Director of IAAD, looks on as a demonstration is in progress.

The Kenyan farmer discovered that this new hive was relatively inexpensive, promising substantial gains for his investment through increasing the amount and quality of the honey produced; while his wife could actually double the family income through the sale of the beeswax. Eventually, the most enthusiastic beekeepers in the Kenya-Canadian project were trained for extension work and management of the program.

As part of the Kenya-Canadian project, small wood shops were designed for making the Kenya top bar hive and other equipment. Local people were trained to build this equipment. Collection sites and centers for processing honey and beeswax were also set up. A ready market for this honey crop makes beekeeping a profitable enterprise that fits in well with other farming interests. By improving the standard of living, such changes in apiculture can contribute significantly to the welfare of the entire country.

The Kenya-Canadian project is only one example of the positive potential of Third World apicultural programs. Judging from the response to this IAAD seminar, there are enthusiastic men and women willing to support and participate in the future of development apiculture.

For more information about IAAD, contact: R. Dillinger, Ex. Dir. IAAD, 3201 Huffman Blvd., Rockford, IL 61103.□

Representatives from a number of countries, along with interested persons from the Peace Corps met with beekeeping advisors during August. This development seminar was held at the Agricultural Technical Institute in Wooster, Ohio.

At Strauser we are constantly working on research and development– to make beekeeping ever more profitable and pleasant.

Strauser Bee Supply is dedicated to providing a wide range of products for beekeepers. We have an ultra-modern woodworking plant which produces only the best of wooden bee supplies at reasonable prices. Our new waxworks is busy making fine-quality plain and wired foundation, in addition to recovering beeswax from all slumgum, cappings and old comb.

We recently added a clothing department to turn out our own folding bee veils for adults and children. Last but not least, we have designed two new forklifts especially for the beekeeper.

High fructose corn syrup is available at our Three Rivers, Texas, branch in your drums or in our tote bins. Call ahead for scheduling.

Strauser
BEE SUPPLY, Inc.
Box 991 • Walla Walla, Washington 99362
TOLL FREE 1-800-541-8908

Wood Products
Quality wood products at fair prices. Supers, frames, lids, bottom boards.

Protective Clothing
Strauser folding veils, veils for kids. White coveralls with or without Velcro-attached veils. 36 - 50 Regular or tall sizes.

Buy Now for Unprecedented Bargains and Quality Supreme Strauser Foundation and Wood Goods.

Swamper Forklifts
Two-wheel drive and four-wheel drive. Call or write for brochure. Designed especially for beekeepers.

Regional Offices:

East:
Rt. 1, Millerton, PA 16936
1-800-233-4273
Penn. res. (717) 537-2381

South:
Box 788, Three Rivers, TX 78071
Texas residents:
(512) 786-4011 1-800-541-8908

Central:
Route 3, Auburn, NE 68305
(402) 274-3725 1-800-541-8908

California:
2100 E. Howell - Unit 105
Anaheim, CA 92806
(714) 634-3668
1-800-541-8908

THE WORLD OF BEES AND BEEKEEPERS
The newest bee magazine for the whole family. Published quarterly. Subscription rate $5.00 per year.

Capping The News

THE EDITORS

"Beekeeping Small Talk"

Honeybees, Pesticides, and the Public

THE CONTROVERSY surrounding the application of chemicals to food plants continues to concern beekeepers and, to a certain extent, the public. The level of concern by the general public about the killing of bees seems to vary with the degree of concern over current domestic and foreign problems and other matters concerning our individual lives. There are always a certain number among the public who remain aware of and sympathetic to the beekeeper's problems with poisonous sprays and bee kills. Most of the general public may not be aware of the close relationship between an ample and varied food supply and the pollinating role of the honeybees. This unawareness may lessen public support which is needed to put pressure on the economically and politically powerful individuals and groups which refuse to acknowledge and respect the right of beekeepers to operate apiaries in reasonable safety.

The campaign to "Save The Bees" may not be enough, but it is a courageous beginning. Public awareness of the act of killing honeybees by agricultural chemicals needlessly or carelessly applied can be a powerful ally in a head-to-head confrontation.

The agricultural chemical industry is undoubtedly making a sincere effort to be conciliatory toward the beekeepers and there are individuals within these organizations who have a voice in determining future policies that will protect the beekeeper to a greater degree. We beekeepers must keep up communication through every avenue which offers access to these individuals. It must be kept in mind that many of the demands of the consumer for an ever increasingly cosmetically perfect food product is one reason behind the ever increasing use of many agricultural chemicals. It must also be kept in mind that the use of agricultural chemicals is in response to the urgent demand for a maximum world food output. None of these often expressed and undoubtedly sound reasons excuses the destruction of nature's balance which allows the beneficial organisms to survive and help control epidemics of the very destructive ones. Chemicals, as such, are indispensable to help support the food requirements of a rapidly increasing world population but we must continuously monitor their short and long term effects on our health. The effects on honeybees should be dramatic proof that caution is in order in regard to the future of agricultural chemicals.

Several avenues to finding ways to curtail chemical use or to lessen the damage to honeybees are being explored and experimentally tested. One method consists of adding a harmless substance to the very toxic sprays which will selectively repel honeybees from the blossoms contaminated with the chemical. Another approach is the substitution of chemicals which are less harmful to honeybees, or non-toxic, such as the biological agents.

"Most...may not be aware of the close relationship between an ample and varied food supply and the pollinating role of the honeybees."

In the meantime there must be a continuous vigil kept on what happens to honeybees when new chemicals and new methods of application are used. Monitoring by individual beekeepers is the only reliable method to do this at present, but the reports must be checked, analyzed and interpreted by a responsible organization which has the trust of both the beekeepers and the chemical manufacturers and applicators. This is usually the role of the state and federal control agencies, although we may see some new developments in respect to forming a group which represents cooperation between all of the elements involved in this very complex problem. Documentation of bee kills is a very important beginning to a solution. There will be increasing evidence made public about what beekeepers now know to be a fact — that toxic chemicals destroy bees. Beekeepers will prove to the public that there are destructive influences which, while not actively advocating, at least leave the door open to uncontrolled chemical use on food crops and other pest control applications. Beekeepers, because of the recognition given to their documented losses, can alert the public of the very real possibility, heretofore possibly only an assumption, that there are lethal amounts of chemicals in our food chain.

We have seen some heroic, though spontaneous action taken by individual beekeepers but perhaps we will now see a growing united action joined by the public, to "Save The Bees" and to possibly save the human race from compounding the same mistakes which are killing the honeybees.

Honeybees without doubt are in the crucible of a vast experiment on the human race. The public is often pathetically unaware of the results of the first "field experiments". Bees are participants in experiments already far enough along to determine if living organisms can withstand the impact of powerful chemicals and remain healthy and productive. The first results have been both reassuring, and at times, very disturbing. The effects on bees by chemicals applied liberally and sometimes haphazardly should be a warning that changes may be needed. The difficulties of the bee industry with agricultural chemicals has come about because honeybees are not a great deal different physiologically than the pests the chemicals are formulated to kill. The adaptation of bees for pollination and the placement of colonies near cultivated crops requiring spraying has brought the honeybee under the influence of pesticides, often with disastrous results. So far, no effective means has been developed that will give selective protection to the bee and other beneficial insects. The head-to-head confrontation continues and there can be no weakening if beekeeping is to continue to provide a service to agriculture and a manner of prosperity to the beekeeper.□

Introducing CERTAN™

CONTROLS WAX MOTH LARVAE IN HONEYCOMBS. NATURALLY.

Certan is a new biological insecticide developed specifically for the effective control of wax moth larvae in stored combs or active hives.

Certan is unique. It contains a natural bacterium which, when eaten by wax moth larvae, paralyzes and destroys the digestive tract, resulting in death.

- Certan has been scientifically tested by the U.S.D.A. and Sandoz.
- Certan provides economical, long-lasting control.
- Certan does not affect honeybees or colony activities.
- Certan does not affect the taste of honey produced on treated combs.
- Certan is non-toxic to humans, pets, wildlife and beneficial insects.
- Certan is a natural biological control.
- Certan is a water-dispersible liquid concentrate
- Certan eliminates dangerous fumigant handling and storage.
- Certan is easy to use.
- Certan is available in convenient 4-ounce bottles for hobbyists and 1-gallon containers for commercial beekeepers.

Special Introductory Offer

Sandoz is ready to help you start your Certan wax moth larvae control program with a free spray applicator. It is available with the purchase of a 4-ounce bottle of Certan. Contact your beekeeping supplies dealer TODAY! Supplies are limited.

SANDOZ

SANDOZ, INC., CROP PROTECTION
480 Camino Del Rio South
San Diego, CA 92108

Use pesticides effectively. Read and follow label directions carefully.

Terramycin Residues in Surplus and Brood Nest Honey After Medication of Honeybee Colonies by Three Different Methods (1)

By MARTHA GILLIAM
USDA, Carl Hayden Bee Research Center
2000 E. Allen Road
Tucson, Arizona 85719
and
ROBERT J. ARGAUER
USDA, Agricultural Environmental Quality Institute
Beltsville, Maryland 20705

(1) Mention of a proprietary product or company name does not constitute an endorsement of this product by the U.S. Department of Agriculture.

SUMMARY

IN EXPERIMENTS conducted in Tucson, Arizona, no Terramycin residues were found in either surplus or brood nest honey by four weeks after medication of honeybee colonies with sugar dusts or syrup sprays ceased. No residues were found in any honey from colonies treated with two extender patties, nor in larvae from colonies treated by any of the three methods. Therefore, residues apparently do not present a hazard when Terramycin is administered by any of the three methods tested.

Terramycin (TM; oxytetracycline) incorporated into a food source such as sugar syrup, honey, powdered sugar, pollen patties, and antibiotic extender patties is used by beekeepers to control both American foulbrood and European foulbrood diseases of honeybees, *Apis mellifera*. The antibiotic extender patties, which were devised by Wilson et al. (1970, 1971), are still experimental, and their use has not been approved; however, an application for labelling has been made to the Food and Drug Administration.

The purpose of the present work was to compare the amounts of TM residues in both surplus honey (honey stored above the brood nest and available for harvest) and brood nest honey from outdoor free-flying colonies. We thought that differences might exist between residues and degradation rates of TM in the honey stored by the bees in different areas of the hive after treatment of the colonies by various methods. Antibiotic extender patties, sugar dusts, and syrup sprays were selected for use in determining where the bees stored the medicated diets and the time required for the degradation of TM in honey. We chose these three methods of treatment for the following reasons: (1) dusting is a very popular method of treatment, especially for commercial beekeepers, since the preparation and administration of the material are quick and easy; (2) antibiotic extender patties are an attractive method of treatment since one patty will last for six to eight weeks in a bee colony; and (3) syrup sprays that cause engorging of the nurse bees (Farrar, 1956) have been used effectively as a control at the Carl Hayden Bee Research Center since Stephen Taber, III introduced this method. Also, since TM rapidly degrades in sugar syrup at room temperature (25 °C, 77 °F) and brood nest temperature (34 °C, 93.2 °F) (Gilliam and Argauer, 1975), spraying of sugar syrup immediately after it is prepared eliminates this problem which occurs with both in-hive and outside feeders.

In addition, we examined young larvae since they are susceptible to both American foulbrood and European foulbrood diseases. In our earlier work, we were unable to detect TM in larvae from a colony fed a medicated pollen patty (Argauer and Gilliam, 1974). Since our techniques for analyzing TM have improved, and since we assumed that TM must be present in these larvae to protect

(Continued on page 546)

Table 1. Terramycin (µg/mℓ) in brood nest honey.

	Treatment								
Date	Syrup Sprays			Sugar Dusts			Antibiotic Extender Patties		
	Colony #			Colony #			Colony #		
(1979)	1	4	8	2	3	7	5	6	9
7/3	48	78	55	12	63	23	0	1	0
7/10	40	89	76	29	74	33	0	0	0
7/17	29	71	52	26	69	68	0	2	0
7/24	95	99	72	28	39	45	1	0	0
7/31	46	61	46	22	39	28	0	2	0
8/7	98	58	53	23	22	33	0	4	0
	Treatment Ended								
8/14	22	17	27	3	19	2	0	4	0
8/21	13	5	5	2	3	0	0	4	0
8/28	1	0	3	0	0	0	0	2	0
9/4	2	0	1	0	0	0	2	0	0
9/11	3	4	3	0	0	0	0	1	0
9/18	2	0	0	0	0	0	0	0	0
9/25	0	0	1	0	0	0	0	0	0
10/2	2	0	0	0	0	0	0	0	1
10/9	2	0	0	0	0	0	0	–	1

Terramycin Residues...

(Continued from 545)

them from the bacterial diseases, we wished to re-examine larvae for TM. Details of these experiments are found in the paper by Gilliam and Argauer (1981).

Ten colonies of honeybees housed in three story Langstroth hives fitted with nine frames per box were used. Adult populations, frames containing brood, and frames containing stores were equalized as much as possible before the experiment began. Three of these colonies received animal soluble powder Terramycin (contains 25 g oxytetracycline hydrochloride/lb formulation [Pfizer]) in antibiotic extender patties, three received it in medicated sugar dusts, and three received it in medicated syrup sprays. One colony located at another apiary received nothing and served as the control.

Large antibiotic extender patties were prepared according to Wilson et al. (1971) to contain 300 g (⅔ pound) of granulated sugar, 150 g (⅓ pound) of Crisco, and 22.5 g (2 tablespoons) of animal soluble powder TM. These patties were divided in half and placed on a piece of aluminum foil on the top bars of the brood nest between the two brood-containing hive bodies of each of the three test colonies (numbers 5, 6, and 9). The first patties were placed in the colonies on June 25, 1979. On July 27, the remainder of each patty was removed and weighed to determine how much TM the colony had received, and a new patty was then placed in each colony. On August 7, the remainder of the second patty was removed and weighed.

The sugar dusts were administered at the rate of 3.8 g (1 teaspoon) of animal soluble powder mixed with 28 g (1 ounce) of powdered sugar per colony per treatment. The dust was applied on the ends of the frames of the brood nest between the two brood-containing hive bodies of each of the three colonies (numbers 2, 3, and 7). Ten treatments were given at four to five days intervals beginning June 25 and ending August 6, 1979.

Medicated syrup for spray treatments was prepared by adding 3.8 g (1 teaspoon) of animal soluble powder to 1.5 l (about 1.5 quarts) of 50% (w/v) sugar syrup. Each of the three colonies (numbers 1, 4, and 8) was sprayed on the combs containing the brood with 750 ml (about ¾ quart) of the medicated syrup using a hand-held garden sprayer. Ten treatments were given at four to five day intervals beginning June 25 and ending August 6, 1979.

Table 2. Terramycin (μg/mℓ) in surplus honey.

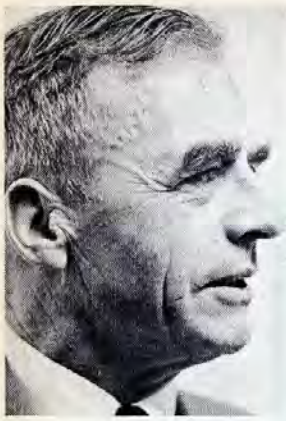
Date	Treatment: Syrup Sprays			Sugar Dusts			Antibiotic Extender Patties		
	Colony #			Colony #			Colony #		
(1979)	1	4	8	2	3	7	5	6	9
7/3	2	0	0	0	0.5	0	0	0	0
7/10	0	13	1	0	4	8	0	0	0
7/17	0	9	2	2	5	11	0	0	0
7/24	1	11	13	6	30	11	0	0	0
7/31	8	27	9	0	17	22	0	0	0
8/7	14	3	1	2	12	17	0	0	0
Treatment Ended									
8/14	4	16	4	2	12	7	0	0	0
8/21	8	13	15	0	9	1	0	0	0
8/28	0	2	3	0	5	0	0	0	0
9/4	2	0	0	1	0	0	0	0	0
9/11	2	0	0	0	0	0	0	0	0

Colonies treated with antibiotic extender patties and syrup sprays received about the same amount of TM (1 g), which was half the amount received by the colonies that were dusted (2 g).

The following samples were collected from each colony for analyses of TM beginning one week after treatment and continuing each week thereafter for 22 weeks: 2 ml of brood nest honey, 2 ml of surplus honey, and 25 larvae that were 48 hours old or younger. Larvae of this age group were selected because they are susceptible to American foulbrood (Woodrow, 1941) and European foulbrood (Shimanuki, 1978). The honey samples were collected from capped cells where possible. Samples were analyzed for TM by a fluorometric method as described by Gilliam and Argauer (1981).

Tables 1 and 2 show the amounts of TM found in brood nest honey and surplus honey. Our results, using chemical methods for analyzing TM in honey, agree with those of Wilson (1974), who used microbiological methods, since we found no TM residues in the surplus honey of colonies treated with two antibiotic extender patties. In addition, we found no TM residues in brood nest honey from these colonies since the fluorescence values for brood nest honey from colonies 5, 6, and 9 (Table 1) are near those of samples from the untreated control colony. Thus, because of the lack of residues and the fact that TM in extender patties is stable for at least 11 weeks at brood nest temperature (Gilliam and Argauer, 1975), the patties appear to be an excellent method for administering TM to bee colonies. Wilson et al. (1971) demonstrated that the patties were 100% effective in controlling American foulbrood for at least one season and had no adverse effects on the brood or adult bees. Apparently, consumption of the patty is slow enough that the large amount of TM used does not produce toxic effects in the brood. We also observed no adverse effects on the adult bees or brood in our treated colonies and

(Continued on page 550)



Siftings

By CHARLES MRAZ
Box 127
Middlebury, VT 05753

ON PAGE 497, September 1981 *Gleanings* is another comment by a leading pediatrician in the State of Delaware on the question of honey in infant feeding. Much of these comments have been answered by previous Siftings articles and page 500 of this same September issue. In his letter to the editor, Dr. Hawkins states," I would suggest to Mr. Mraz that, until he has modern training in pediatrics and bacteriology, he stick to writing about the subject he knows best, BEEKEEPING"

I agree with Dr. Hawkins completely. I consider the use of natural honey in infant feeding as an important part of beekeeping; just as important as swarm control, disease control, queen breeding, wintering, etc. as are all subjects connected in the broad field of beekeeping.

If we beekeepers do not have the courage to defend natural honey that God and Mother Nature gives us from the fragrant flowers, who will? The beekeeping industry could not receive a nickel for research with honey in infant feeding. Yet, pediatricians may advocate artificial commercial infant formulas that are said to cause a million deaths, world wide. See page 500.

In the field of modern pediatrics how much research has ever been done with natural honey in infant feeding? If none, then on what grounds do you base your criticism? No infants in the California statistical research were on honey formulas.

A recent letter I received should be of interest to Dr. Carr and Dr. Hawkins, from Mrs. B. of New York. She writes,

"When my daughter, Rosa, was born she immediately started sucking her thumb. At 12 months old the thumb swelled and by 18 months it was filled with infection, swollen red and hard. My pediatrician advised a $20.00 a bottle antibiotic and cortisone cream (on a 2 year old!)

"Anyway, I read in *Prevention Magazine* that honey was anti-fungal, used to heal many things, and this property was proven in that honey cannot spoil, does not grow mold, etc.

"Since the medicines had not worked on her thumb I started applying your crystalized delicious bee honey on her thumb with a dab of Vitamin E; and after a year & a half of infection, in 10 days the thumb is almost clean, uninfected, no longer red.

"Please don't think just any honey could have been used, most are not suitable because they are filtered....."

If honey can clean up an infection with external application in 10 days, what expensive, modern antibiotics failed to do in 1½ years, is it not reasonable to assume that natural honey will also heal internal infections just as well? You don't believe it? Suppose you try it; that is the only way you will ever find out.

Many years ago when I was starting to treat friends and neighbors with bee venom therapy for rheumatic problems, a doctor even then advised me, "Why don't you stick to your beekeeping and let us doctors treat the arthritics?" Your advice is not new, Dr. Hawkins, I've been hearing it for 47 years. Again, I believe bee venom is also a most important part of beekeeping. How many doctors know anything about the physiological, pharmacological and immunological activity of bee venom? Less than a dozen in all of the United States.

Unfortunately, at present, doctors are not permitted to use bee venom therapy for treating rheumatic diseases, even if they wanted to. It can now be used only to treat those hypersensitive to bee stings; this only within the past three years. Under these conditions a beekeeper has a right, perhaps even a duty, to help those tortured with rheumatic diseases when years of modern medical treatments fail completely and modern drugs often cause more harm than the disease itself. They certainly have the right, if they wish, to try an alternate treatment that over the past 100 years has proved to be effective, safe and costs almost nothing.

It is most gratifying after these many years trying to promote the use of bee venom therapy, to find that interest in its use is increasing and no longer considered "quackery" by many even in the medical profession. We hope more and more beekeepers will take an interest in this fascinating field of bee venom therapy to relieve their family and friends of the horrible suffering caused by these degenerative diseases.

This reminds me the North American Apiotherapy Society will gather again near or in Washington, D.C. in November for the annual meeting. Everyone interested is invited to attend. For information, write to: Ann Harmon, 6511 Griffith Road, Laytonsville, Maryland 20760. There is more to beekeeping than getting stung and making honey. I feel sure it will open up a whole new field in holistic and preventative medicine.

At the coming Apinomdia International Beekeeping Congress in Acapulco, Mexico, there will be an International Apitherapy meeting and a chance to see and hear what the rest of the world is doing in this field. There is a great international interest in almost every country in the world. Did you know that there is an Apitherapy Society in China? It is part of the Chinese Beekeeping Society. We hope a representative from China will attend the Congress in Acapulco so we can see what interests they have in this field.

So you see, even on the opposite sides of the World, God and Mother Nature are teaching the same lessons and speak a universal language. It is only from Mother Nature that we can learn new things in modern medicine, new approaches to healing that can never be learned from books or in lecture halls.□

PEWTER HONEY BEE SET WITH TRAY AND LADLE

This 11 oz. Bee Set demonstrates American craftsmanship at its best. A beautiful gift or accessory to grace your table. Available in Traditional or Bright Finish. Cost $27.75 plus $1.00 shipping and handling. Master Charge/Visa - show expiration date. Also, send $1.00 for color catalog of over 200 Pewter items. Write to Pewter Potpourri, P. O. Box 220364, Charlotte, N.C. 28222.

ASK YOUR DEALER

$13.95 per pair postpaid s, m, l, xl

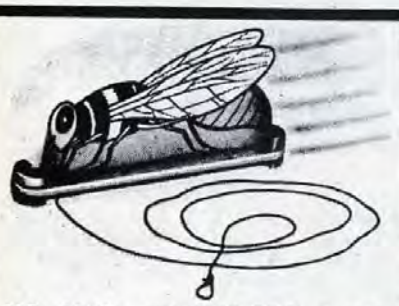
SPRINGBRANCH BEE FARM
Witt's Springs, Ark. 72686

The MEYER Stingless Bee Glove

BEE PASTURE SEEDS

Specials on clovers, vetches, rapeseed, buckwheat, mixtures.

For free brochure write:
Bee Pasture Seeds
R.R. 2, Sabetha, KS 66534
or Phone: (913) 467-3125 before 8 a.m. — after 8 p.m. Mon. — Thur.



NO. 4212 — BUZZY BEE. Create a whirring and buzzing sound by twirling it around. A 4¾" x 3__ colorful cardboard bee is attached to a strip of wood. A rubber band wrapped around it vibrates as the put in motion. Has a 30" string attached. A fun toy with lots of play value. Sample $1.25 postpaid; $6.25 doz., $60.00 gross + postage. **TESNER, 5865 Mahoning, Youngstown, OH 44515.**

Please tell our advertisers you saw them in Gleanings

**** NEW FRAME FACTORY ****

Interlocking top and bottom bar (9⅛, 7¼, 6¼ 5⅜) Specify wedge top or center grooved top and solid or grooved bottom bars. Lots of 500 of one size.

Factory Introductory Offer
Commerical Frames Top Quality
500 frames — .23 or $105.00
1000 frames — .21 or $210.00
5000 frames — Call for price quote

Commerical supers: No knots in dovetail, top or bottom of supers.

25 supers #1	100 supers #2
9⅝ — $4.00	$3.80
7⅞ — $3.00	$2.89
6⅝ — $2.60	$2.50
5¾ — $2.39	$2.20

***Note we have a good supply of seconds**

50 supers #2	100 supers #2
9⅝ — $3.25	$3.05
7⅞ — $2.70	$2.45
6⅝ — $1.90	$1.80

Inner cover — $2.75 each or $68.75 for mini of 25, 100 for $2.45

Telescoping cover w/metal (mini of 25) $5.50 or $137.50

Queen excluders — Metal 50 (125 lbs.) $170.00 Metal 100 (250 lbs.) $330.00

Pine Tops or Bottoms — $2.60 each or $65.70 for mini of 25, 100 for $230.00

Pine Tops or Bottoms — Flats 100 or more $189.95

Nuc boxes — 5 frames, top and bottom (unassembled 1-50 $7.95 (call for quantity)

Shipping Weight

500 — 9⅛ frames 219 lbs.	25 — 6⅝ supers 150 lbs.
500 — 6¼ frames 195 lbs.	25 — 5¾ supers 115 lbs.
25 — 9⅝ supers 225 lbs.	25 — tops or bottoms 120 lbs.

NEW 1981 CATALOG AVAILABLE

Accepting honey in trade for beekeeping supplies.

Master Charge/Visa Welcome

Glorybee Honey & Supplies
1006 Arrowsmith St. Eugene, OR 97402
503-485-1649

****NEW GLORYBEE HONEY'S AUTHORIZED FRANCHISE DISTRIBUTOR****
(New Distributor for South Central USA)
****PRAISE THE LORD APIARIES****
Mr. Lester Haines — Owner
1806 F. Howard Ln.
Round Rock, TX 78664
512-251-3823 (near Austin)

The Haines are conveniently located (on I.H. 35) to serve interested Commercial Beekeepers in Texas and surounding area.

Freight cost's via Texas are higher due to freight from the factory; but prices are competitive accordingly to our market analysis.

EXAMPLE:

100 — 9⅝ supers #1 — $4.45 each
100 — 9⅝ supers #2 — $3.82 each
100 — 6⅝ supers #1 — $3.06 each
100 — 6⅝ supers #2 — $2.35 each
1000 — frames $ .25 each

****Write or call for more prices on supplies****

An Easy Way To Identify A Problem Queen

By JOSEPH TARDIF
Dartmouth, MA

THIS PAST SUMMER I ordered extra queens which eventually were placed in my "queen bank". My "bank" is simply a deep super of drawn frames with three or four frames of eggs and brood, all of which is separated by two queen excluders over a strong queen right hive. A special frame holds the queen cages, minus the workers. The emptied frames, which had contained brood, are replaced about every two weeks to keep nurse bees always near the queens. Such a bank permits me to keep many queens available for quite some time and thus allows considerable flexibility. It only takes minutes to set up and is worth the trouble.

I had requeened a good many of my hives, but there were seven queens left in the "bank" that hadn't been used by late October. The weather was becoming colder, and hives, in which to use the extra queens, had to be found rather quickly.

At the first of my apiaries, I tried to find hives that weren't bringing in pollen from the last of the asters and goldenrods. The lack of pollen collecting bees, when other hives have them, is a rather good indicator, of a hive that may need attention. No such hive could be found. Surely, out of a twenty-five hive apiary, there would be at least one or two with a problem queen.

Having many apiaries and only a few days a week to get them ready for winter, it was imperative that some signs be found which would indicate problem hives without my having to look at the brood frames of each one of them.

The first sign noticed that seemed to have merit, little as it may be, was the presence of the wax moth on certain hives (3) and not on others. I supposed that maybe they could detect the weakest hives. This sounded a bit farfetched at first, but the few that I found thus chaperoned were lighter and had to be given extra frames of honey. This was not an efficient and infallible way of looking for failing queens.

A better indicator of what I was looking for, a queenless hive or a failing queen, **at this time of the year**, was the presence of drones when no other hives had any! Why would a hive be keeping its drones much longer than any of the others? Maybe, because it needed them!

Nearly **every hive**, which had drones and was allowing them to enter and leave freely at this late date, **needed a queen**. I used all of my extra queens to replace failing queens.

Once I found a virgin queen, due luckily to my spotting the cell from which it had come out. One has to realize that there may be a virgin present in such situations. If the bees cling very tenaciously to the cage without fanning, the situation warrants further investigation.

I have also found a better use for those hives which were very light but otherwise queenright and in good shape. They were used to requeen some problem hives.

Terramycin

(Continued from 546)

were unable to find any of the patty material stored in the combs or deposited outside the hives.

As expected because of the nature of the treatments, the highest level of TM was found in brood nest honey of colonies treated with syrup sprays, although no cumulative effect was observed (Table 1). Even though the amount of TM applied in sugar dusts was twice that given in syrup sprays, less was found in the brood nest honey of colonies that were dusted. We attribute this difference to the method of application: The dust was applied to the end bars of the frames, and the sugar syrup was sprayed directly on the brood combs.

A high percentage of TM applied in dusts and sprays goes into the brood nest honey and is not transferred to any appreciable extent to surplus honey (Tables 1 and 2). However, our work has shown TM degrades in both surplus and brood nest honey of colonies that are dusted and sprayed by four weeks after the treatments have ceased.

We were unable to detect TM in larvae from any of the treated colonies. The analytical limit for detection was estimated to be 0.5 ug of TM per 15 larvae. Because of the nature and frequency of the spray treatments, some TM must penetrate into the cells containing the brood or into empty cells in which the queen will eventually lay eggs. Indeed, the bees continued to fill empty cells with eggs, pollen, and honey.

Our failure to detect TM in larvae from treated colonies, particularly those that were sprayed, indicates either that the larvae contained only small amounts, below our detection limit, or that they rapidly metabolized the TM.

In conclusion, TM residues apparently do not present a hazard when the antibiotic is administered by any of the three methods that we tested. However, we emphasize that the time required for degradation of TM is influenced by temperature. For example, Gochnauer and Bland (1974) found no TM activity in medicated stored syrup in bee colonies later than two weeks after feeding in June and July, although Corner and Gochnauer (1971) reported that TM persisted in medicated stored syrup throughout the winter months.

References

Argauer, R. J. and M. Gilliam. 1974. A fluorometric method for determining oxytetracycline in treated colonies of the honeybee, *Apis mellifera*. J. Invertebr. Pathol. 23: 51-54.

Corner, J. and T. A. Gochnauer. 1971. Persistence of tetracycline activity in medicated syrup stored by wintering honeybee colonies. J. Apic. Res. 10: 67-71.

Farrar, C. L. 1956. Treating bee diseases. *Gleanings In Bee Culture* 84: 207-211, 218.

Gilliam, M. and R. J. Argauer. 1975. How long is Terramycin stable in diets fed to honeybee

(Continued on page 551)

TERRAMYCIN RESIDUES IN SURPLUS AND BROOD NEST HONEY AFTER MEDICATION OF HONEYBEE COLONIES BY THREE DIFFERENT METHODS (1)

(Continued from 550)

colonies for disease control? *American Bee Journal* 115: 230, 234.

Gilliam, M. and R. J. Argauer. 1981. Oxytetracycline residues in surplus honey, brood nest honey, and larvae after medication of colonies of honeybees, *Apis mellifera*, with antibiotic extender patties, sugar dusts, and syrup sprays. Environ. Entomol., in press.

Gochnauer, T. A. and S. E. Bland. 1974. Persistence of oxytetracycline activity in medicated syrup stored in honeybee colonies in late spring. J. Apic. Res. 13: 153-159.

Shimanuki, H. 1978. Bacteria. In R. A. Morse, [ed.], *Honey Bee Pests, Predators, and Diseases*. Cornell University Press, Ithaca, New York.

Wilson, W. T. 1974. Residues of oxytetracycline in honey stored by *Apis mellifera*. Environ. Entomol. 3: 674-676.

Wilson, W. T., J. R. Elliott, and J. D. Hitchcock. 1971. Antibiotic extender patties for control of American foulbrood. J. Apic. Res. 10: 143-147.

Wilson, W. T., J. R. Elliott, and J. L. Lackett. 1970. Antibiotic treatments that last longer. *American Bee Journal*, 110: 348, 351.

Woodrow, A. W. 1941. Susceptibility of honeybee larvae to American foulbrood. *Gleanings In Bee Culture*, 69: 148-151, 190.

Getting Maximum

By GRANT D. MORSE, Ph.D.
Saugerties, NY

A young neighbor of mine has a few colonies of bees and is toying with the idea of becoming a commercial beekeeper. Recently he said to me, "How do you go about getting a maximum crop?" He followed up the question by saying that unless he could secure higher yields than he had been getting for the past three years, he doubted if beekeeping on a commercial scale would pay him.

The more I thought about his statement the more I realized that some commercial beekeepers get much better yields than others. Here are some of the thoughts that then occurred to me, dealing with details that influence yields. I'll merely mention some of these ideas because I've elaborated on them before. Others I'll expand on to some limited extent.

Probably the first essential to securing maximum production is to locate in a region that traditionally provides superior nectar sources year after year. Don't settle for a location that lacks this qualification just because you happen to live there.

If the location you decide upon is in cold country, master the successful methods of wintering so that your losses never exceed ten percent, usually less. To learn such methods, start on a small scale in beekeeping and don't expand too much until you have the problem mastered.

No matter where you settle, swarming will always confront you. That problem, too, you must master. The factors that enter into swarming are well known. They can be met in many different ways. But they cannot be successfully ignored by the commercial beekeeper who needs to make a living from his bees. I'd recommend trying to learn what will work for you at the same time you are working on the wintering question.

One of the best written materials on this subject is *Farmer's Bulletin-1198* U.S. Dept. of Agriculture. But just reading this bulletin will not assure you freedom from the troubles of swarming until you have learned how to apply each one of the thirteen recommended preventive swarm measures. Here again, you won't know whether you've mastered the principles until you have applied them to, let us say, fifty colonies, for at least three years and been successfully free from swarming.

Take the number two recommendation, for example: "The use of brood chambers large enough to hold the maximum amount of brood without crowding." What may seem to you to be freedom from crowding may not appear that way to the bees, especially in a year when colonies are particularly prone to swarm. You can't afford to be wrong in your conclusion. After the bees start building cells in a thousand of your colonies, and you have only your own hands and those of possibly one not-too-knowledgeable helper to remedy matters, your potential crop is largely gone.

Every beekeeper has to decide how many frames of brood and young bees he can safely allow to remain together in each hive before the main honey flow, usually during the month of May and the early part of June.

Shall he Demaree? Is reversing enough? If so, how many times? Shall the entrance cleats be left in right up to the first honey flow? Can he afford to requeen? If so, how shall it be done? If he feels he can't afford wholesale requeening, shall he depend totally upon supersedure? If he does not believe in Demareeing, should he follow some other method of reducing the number of frames of capped brood in the broodnest?

Or take recommendation number three: "The use of good worker combs in the brood chamber to prevent a reduction of the available brood-rearing space."

Some authorities claim that large areas of drone cells in the brood combs is no cause for alarm. On the other hand, some commercial beekeepers make a real effort to introduce a small percentage of frames with new foundation into each colony nearly every year, and to "work out" the old frames with old clogged worker cells. Does it matter? Some think it does.

Or consider recommendation number four: "The arrangement of the brood combs to avoid barriers in the way of a free expansion of the brood nest during the spring." This recommendation, I assume, refers to the tendency of the brood to be present in greatest volume at the top of the unit, and an inclination of the queen to avoid working in the lower hive body, especially near the entrance. The problems here are somewhat like those under number two. Shall the commercial beekeeper have a definite plan to follow in such matters? If so, it is better if he can have worked them out before he becomes the owner of a thousand or more colonies. If he is operating in cold country, the seemingly small matter of whether or not to leave the entrance cleat in may have a very vital effect upon his results.

How about recommendation number seven? "Protection of the hives from the direct rays of the sun by the use of shade boards or double covers." This is a detail that most commercial operators give no attention, at least in the areas that I have visited. Instead, they vary in their practice from establishing their yards in the midst of shade trees, to placing them right out in the open. Neither practice is ideal. Some give extra ventilation; some do not. How essential is it?

Number nine reads: "Management to prevent conditions favorable to the building of sealed honey around the brood nest, or the breaking up of barriers of this kind if they already exist." In the years preceding his becoming a commercial beekeeper, an operator should have learned the negative effects of a honey-bound brood nest, and how to avoid its occurring. A band of sealed honey can act as a queen excluder between the brood nest and the cut comb honey super. It tends to serve also as a deterrent to the placement of pollen in the cut comb frames.

Number eleven reads: "Providing additional space in the form of empty combs for the ripening of incoming nectar, so that the field bees can immediately dispose of the nectar they bring into the hive, to prevent the beginning of any stagnation of the activities of the colony."

We covered this item in a recent article in this magazine. What the writer of the bulletin is emphasizing here is that when honey is being brought into the hive during the rush of a good honey flow, it contains a considerable quantity of water, as a rule. In order to remove the water as rapidly as possible, the house bees can fill the cells with the new nectar only part way. This means that approximately twice as much cell area is needed during the ripening process as will be

required when the cells can be filled to the top and sealed. Many beekeepers are not aware of this fact and consequently do not provide adequate storage space during the ripening periods

Number twelve says: "Removing some of the emerging brood to reduce the number of emerging bees within the brood chamber, thus producing a better distribution of the bees throughout the hive."

The cause of swarming can scarcely be limited to any one factor. But the presence of a large number of young bees just emerged, plus the presence of large areas of capped brood are definitely two contributing elements to the swarming impulse. Furthermore, they are factors which are more controllable than most others. You will observe that these factors arose, also, under numbers two and four.

Just how the brood shall be removed, and to what place, and at what time, are questions the beekeeper on his way to becoming a commercial operator must determine for himself. He will not find universal agreement on the subject. The answer he arrives at may well determine his success or failure.

Recommendation number thirteen reads: "The destruction of queen cells providing they have been started but recently."

During his internship the commercial beekeeper will have learned that once a colony has begun to build queen cells, it can safely be operated on, as a rule, only by being broken up or divided in some manner. The commercial operator, like any other, must adopt a policy that keeps his colonies numerically strong yet not so far advanced toward swarming that they begin to build cells. It can be done, usually, but it demands an understanding by the beekeeper of what swarming is all about, and then how to deal with it.

What else will contribute to a maximum crop? The answer, of course, is that **every** detail of management will make its contribution favorably, or negatively. For example, once you are in the right area, generally speaking, is the site of your bee yard well chosen? Does it have protection from the wind? Does it provide adequate sunlight? Is it concealed from public view — and potential thieves?

Do you have the right strain of queens? Are your yards kept down in size to match the available nectar flows? Are they far enough apart? They should seldom be closer than two miles from each other, as the crow flies; farther is better.

If you are in cold country, are you packing your colonies — at least lightly? Even putting just two colonies together in a pack reduces the heat each of them must otherwise produce for itself alone.

Do you provide hive stands? Hive stands are not a luxury. They make a very real contribution to keeping the hive warm and dry both in summer and in winter. Winter packing without the inclusion of hive stands would be largely a waste of time. They need not be unduly costly. They can be made out of cheap material, and if treated will last a very long time.

Do your bees have ready access to a satisfactory water supply? If not, it will almost certainly pay you to move them. They need water for their brood, and to keep the brood nest cool. If the only satisfactory water supply is far removed, honey production will inevitably be reduced.

There may be a slight tendency on the part of some beekeepers to forget the significance of the individual bee in the colony. They are so small, so seemingly unimportant, that it is easy to forget that they are the producing units. What happens to any one of them is significant. If they have to fly more than a mile to the nectar source, production is lowered. If they are carrying their nectar loads up hill, that's costly, too. If they're flying over a mountain for part of their loads, that's energy wasted — and it's production lowered.

Finally, are you keeping up to date with your information? How many beekeepers' meetings and learning sessions do you attend in a year? What do you read that helps you? Are you helping others as much as you are being helped? □

Book Review

VEGETARIAN MEDICINES by Clarence Myer, Meyerbooks, P.O. Box 427, 235 West Main Street, Greenwood, IL 60425. 92 pages, soft cover. Price $5.95. Part I lists eighteen common food plants and tells how they have been used medicinally. Part II names ailments and conditions which commonly afflict people and some of the vegetarian remedies proposed and used to alleviate these ills.

Honey alone and in combination with other food plant products figures prominently in recommendations for using vegetarian medicines.

Honey by Isha Mellor. St. Martins Press Inc., 175 Fifth Ave., New York, NY 10010. 80 pages, hard cover. $6.95. *Honey* brings together interesting honey and beekeeping lore and mythology. In the text are many quaint, old fine line drawings.

The author, Isha Mellor lives in a cottage in Norfolk, England.

What You Should Know About Honey by Walter L. Gojmerac. Eureka Valley Enterprises, P.O. Box 7604, Madison, Wisconsin 53707. 107 pages, soft cover. $5.95. The author, Dr. Walter Gojmerac is the Extension Entomologist at the University of Wisconsin. His strong academic background, writing experience and knowledge of beekeeping is reflected in the excellence of this compact, concise coverage of the subject of honey. A brief introduction to beekeeping leads the reader to the main topics: The producing, processing, and composition of honey. This is followed by a description of the various forms of packed honey, including the several forms of comb honey. Other sections describe the various uses of honey including honey recipes, making mead, exhibiting and judging honey. Interesting and useful are the pages about the regulations concerning the grading, labeling, and marketing of honey.

The book is generously illustrated with photographs and line drawings.

What You Should Know About Honey contains information that is vital to every beekeeper who wishes to have pride in this visible product of the honeybee. The language is nontechnical and the information is well researched. This book is an excellent complement to the author's previous publications which include *All About Bees, Beekeeping and Honey* (Drake) and *Bees, Beekeeping, Honey and Pollination* (AVI).

Are Pesticides Really Necessary? by Keith C. Barrons, Ph.D., Regnery Gateway, Inc., 360 West Superior, Chicago, IL 60610. 245 pages, soft cover. $6.95. Dr. Keith Barron's involvement in pest management spans nearly a half century as a plant breeder, a university faculty member and as a researcher. An earlier book *The Food In Your Future* presented the story behind the remarkable agricultural progess of recent years.

Dr. Barrows answers the question asked in the title directly and unequivocally in the last paragraph heading of the book — "Yes, Pesticides Are Really Necessary".

Don't, we suggest, take this statement to mean that the author does not recognize the complications leading up to and following the intensive use of agricultural chemicals. He is realistic enough not to endorse the concept of total dependence on chemicals to control plant pathogens but expresses doubts about the present systems of biological controls, for example.

Since a short review provides only a summary of the philosophy of the author and a bare resume of the contents we would be remiss to not inform you that the real message of this book lies in the background information rather than this final word from the author; that he considers chemical sprays necessary. For an issue so significant to beekeeping, the pesticide problem should be studied much more intently than most of us tend to do. Here is the opportunity.□

Table Centerpiece Has Bee Theme

Mary Karl of Decatur, Illinois sent *Gleanings* the photo showing the centerpiece she made for the 1981 N.A.M.E. Houseparty in St. Louis, MO.

The little brown object in the foreground is a tiny bear drinking honey from a bucket. There are four of them on the stand. They are made of bread dough, painted. The small containers of honey in the foreground on the little stand are tiny plastic pieces of tubing filled by dowels, capped with balsa wood and sealed with beeswax. The salesman is a dowel with clothing made of bread dough and painted. His straw hat was handmade of straw. The bee hive is a one inch to one foot scale measured from the Karl bee hives.

The Three Little Honey Bears

Preston County Honey of Terra Alta, WV put out this attractive honey pack with West Virginia Pure Honey and Three Little Bears hot branded into the wood crate. Jim & Bonnie Johnson produce this tourist attration topped off with a rope handle, a vest-like label and a pamphlet that tells all about "Honey as a Food". □

Research Review

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

Requeening Without Dequeening

I THINK MORE beekeepers would requeen their colonies each year if there were a simple, easy way of doing so. The study reported below is another effort in this direction that did not give good results.

In this research an attempt was made to requeen colonies during a honey flow. Each of the test colonies had a queen produced that year (package colonies) or one year old (overwintered colonies). In one series of tests, queen cells within one or two days of emergence were placed between the top bars in the first honey super above the brood nest. In the second series of tests, each colony was given either ripe queen cells as above, a virgin queen with no disruption to the colony, a virgin queen while the colony was being smoked, or a virgin queen while the colony and its bees (including the old and new queens) were being lightly sprayed with a mixture of vanilla, honey and water.

It was shown that it is easier to requeen colonies with old queens than it is with young ones. However, in no instance were a large number of queens successfully replaced. Of the 276 colonies in the test where mature queen cells were used, only 46 (17 per cent) replaced their queen. This is the third large-scale, controlled experiment within the past 20 years where this has been attempted. The earlier tests, first by Dr. Gary of California, and second by Dr. Boch of the Canada Department of Agriculture, and Professor Avitabile of Connecticut showed much the same results.

In the test where the vanilla mixture was used while introducing a virgin queen, only one colony of the 29 tested replaced its queen. However, the author comments that in his experience he has had good results introducing virgin or mated queens into small, single-story colonies with both smoke and vanilla. I think most beekeepers would agree that it is easier to requeen small colonies than large ones.

Jay, S.C.
Requeening queenright honeybee colonies with queen cells or virgin queens. *Journal of Apicultural Research* 20: 79-83. 1981.

Varroa Disease and Its Native Host

Varroa jacobsoni is the mite that causes varroa disease, an ailment that is currently ravaging honeybee colonies in parts of Europe and South America. Its native host is *Apis indica*, a honeybee much like our own European honeybee, but only half its size. *Apis indica* is found throughout Asia. We believe the mite is present in all colonies of *Apis indica*, though to the best of my knowledge no one has ever made a survey to determine if this is so.

A paper just published reports on the situation in the country of Sri Lanka (formerly known as Ceylon). On this island off the southern coast of India, varroa mites were found in all of the *Apis indica* colonies that were examined. Adult female mites were found in both worker and drone brood cells. However, no mite eggs or nymphs were present on worker brood, whereas all stages were found on drone brood. The paper cited below reports these facts; at present, no one knows why this difference occurs.

In the case of European bees, we have known for some time that varroa mites seem to prefer drone brood over worker brood. In at least one paper it has been reported that the infestation in drone brood is 15 times greater than that in worker brood. We do not know whether worker brood has some natural resistance to varroa or is simply less attractive than drone brood because of its shorter development time. A great number of possibilities exist and no doubt this new information on *Apis indica* will stimulate much research in an effort to help beekeepers around the world cope with this difficult disease.

Koeniger, N., G. Koeniger, and N.H.P Wijayagunasekara
Observations on the adaption of *Varroa jacobsoni* to its natural host *Apis cerana* in Sri Lanka. *Apidologie* 12: 37-40. 1981.

Varroa Disease in Brazil

Since we have an active project in Brazil on varroa disease I am frequently asked what is taking place there. Dr. David De Jong, who has been in Brazil for over 14 months, reports that the disease continues to spread. There are now eight Brazilian states infested. The disease is also in Paraguay, Uruguay and Argentina. In the state where De Jong is working (Sao Paulo) not a single man-kept or wild colony has been found that was not infested.

Sao Paulo State is a major producer of oranges and therefore a good honey producing area with many commerical beekeepers. They report varroa disease is a problem but no one is willing to say how much it is affecting honey production. It is still too early to determine what the economic impact will be. No one has yet put forward a control method that is simple and effective.

Monthly Honey Report

(Continued from page 534)

early September. A very short crop; about half of normal production. It is hoped a fall honeyflow will provide adequate stores for wintering. Centeral Nebraska has a good crop, reported to be the best in years. Rainfall has been ample.

Region 5

Very dry weather conditions in North Carolina through August. No nectar being brought in and bees are using stores.

Region 6

Bees have bearly made a living

(Continued on page 563)

INTRODUCING . . .

Troy Worthey
Worthey Bee Farm and Supply
Route 2 Highway 51
Reed Creek Road
Hartwell, GA 30643
Phone: 404-376-7769

Troy Worthey, a building contractor by profession is the Root bee supply dealer in Hart County, Georgia.

Worthey and his wife Doris, who helps him with his beekeeping, plan to increase their beekeeping and their bee supply business in the coming years.

Troy and Doris have a daughter Tammy, 14, and a son James, 11, who works with his father at beekeeping.

With the help of an old time beekeeper, Mr. Howard Parham, right,Troy has reached the commerical level of beekeeping.

With a strong beekeeping background Troy Worthey is very well qualified to give beekeeping advice and to assist local beekeepers in selecting their equipment needs. The A.I. Root Company welcomes Troy Worthey as a new Root bee supply dealer.

Obituaries

R. B. Willson

A LEADING FIGURE in the honey business for more than half a century, R. B. Willson, died at his home in Yonkers, New York, August 6th, after a long illness. He was 87 years old.

As a young man Mr. Willson specialized in biological sciences and entomology and finally beekeeping at Cornell University. After graduating and service in the army during World War I, he taught at Mississippi State College, then returned to Cornell where he was on the faculty in the biology department as a specialist in apiculture.

Mr. Willson entered the honey business in New York in 1926, becoming Vice President of the John G. Paton Company before he established his own business, R. B. Willson, Inc., in the spring of 1946.

Mr. Willson served as a director of the American Honey Institute, chairman of the Honey Industry Council of America, and president of the National Honey Packers and Dealers Association. He was an active participant in the World Honey Congresses, notably at Bucharest, Budapest, Prague, Rome, Vienna, and Moscow. He presented a paper at the Moscow Apimondia in 1971 and was one of the first representatives of the American honey industry to visit China in 1973.

Mr. Willson often represented the honey industry in Washington on tariff matters and the setting of quality standards. He remained active in R. B. Willson, Inc. until his 80th year and continued as Chairman of the Board.

He is survived by his wife Wilma, and three sons; Robert, of Arlington, VA, John, of Berkeley, CA, and Lloyd, of Tucahoe, NY.□

Herman A. Scullen

HERMAN A. SCULLEN, Professor Emeritus, Oregon State University, died May 17, 1981 in Boise, Idaho. Dr. Scullen served in various capacities as an educator, as an apiculturist with the United State Department of Agriculture and in agricultural extension work. He was secretary of the Oregon State Beekeepers Association for twenty years. He has published a number of bulletins, circulars and information leaflets relating to beekeeping and other entomological subjects. Dr. Scullen was also responsible for the Oregon Beekeepers' Newsletter for 31 years until his retirement in 1953.

Following his official retirement in 1953 he devoted a number of years to taxonomic studies of the cercerine wasps of the Western Hemisphere.

Dr. Scullen was active in a number of organizations including the Boy Scouts of America, the Masonic Lodge and local civic organizations.

He is survived by his wife Bessy of Boise, Idaho, a son-in-law and two grandsons.□

Special Supers For

By ARNOLD KASTRUP
Richfield, Ohio

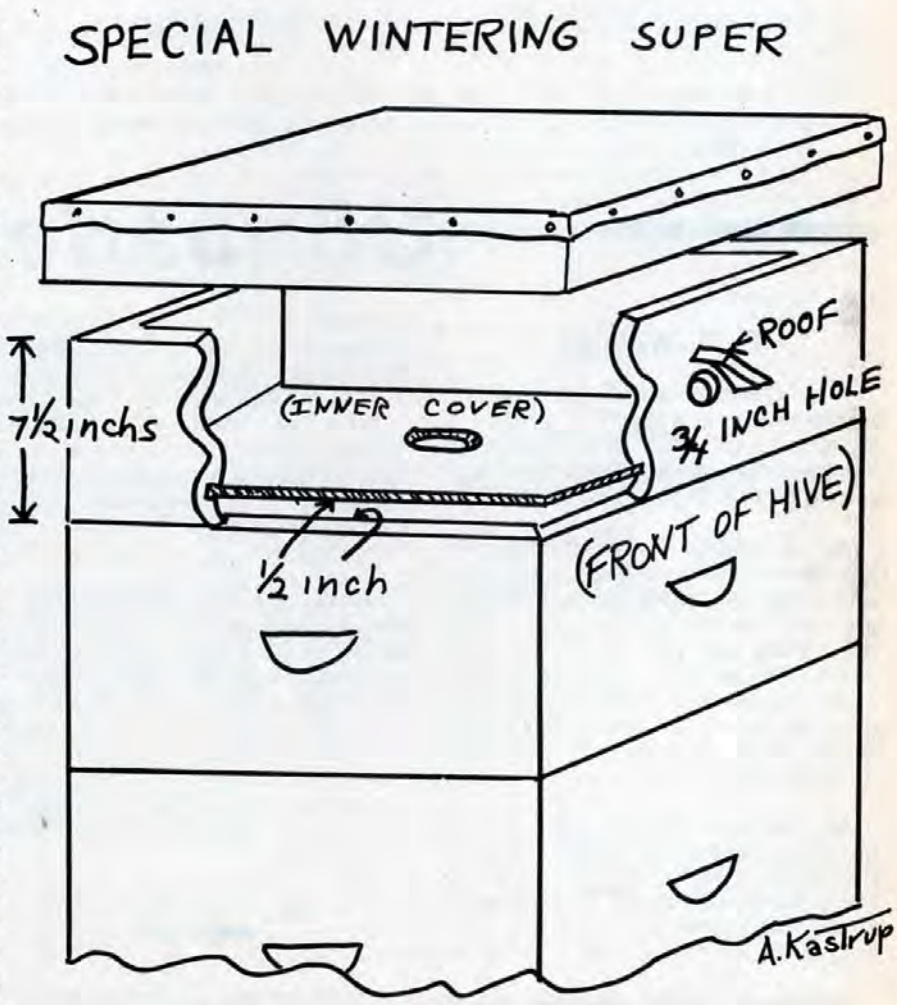
THERE IS ALWAYS a lot of controversy about which is the right way to winter bees in different parts of the country. As a matter of fact, any time you get two beekeepers together you might have a controversy about almost any part of beekeeping. Anyhow, I thought I would write up the way that I winter my bees. If you like the idea you can copy it; if you do not like it, then keep on doing it the way that you have. My way seems to work best for me in my area or location.

What I do to winter my bees is to install an empty super on top of my two brood-chambers (my hives are in northeast Ohio), that is, after a fashion. There is the controversy we talked about. One beekeeper might say it's the cold that kills your bees in the winter; but the school of thought which I belong to says it's the moisture or condensation that kills the bees. But then some might even say it's the bees getting wet and freezing that kills them in the winter months. Anyhow, I feel that moisture is the bigger of the two problems with my hives, and this special wintering super of mine helps cut that problem down greatly.

What do I mean by "after-a-fashion"? Well, the beekeeper who I got this idea from did put an empty super on top of his hives for wintering. Although I liked his idea of added air space up above the hive to give more ventilation and there-by cut down on the condensation during the winter months, I did not approve of the way he was going about doing this. This beekeeper put an inner cover on top of his two brood bodies, then he put an empty super on top of this, and finally his top cover. What I did not like about this setup was that his inner cover's edge was exposed to the outside elements, so you need to paint your inner cover to keep it from rotting. Then too, the inner cover installed in this fashion means that there are cracks between the inner cover and this extra super; more so if they do not fit together just right. The bees will seal the crack where the inner cover meets the top of the brood body, have no fear of that; but they should also seal off where this cover meets the added super. If they do not, this means rain and snow could get in to the top of your inner cover and you are defeating the whole idea of trying to keep moisture out of your hive.

I am not that kind of beekeeper that has all kinds of empty supers lying around. Most of my supers have frames in them, and these frames have either combs or foundation in them. I would not want to take these frames out just to get empty supers. So, what I did was build a special wintering super; and, in doing so, I think I improved on the above idea with a few new angles.

I will now try to explain. First of all, I built my special super with an inner cover that was built right in, with no edges to come in contact with the elements outside, like rain and snow. I did this by cutting a 1/4 inch groove on what was to be the inside of my super, before I nailed this super together. I cut a piece of 1/4 inch plywood the right size for my inner cover. This 1/4 inch plywood also had an oval hole cut in the center, just like any inner cover would, where you can install a bee escape if need be. This



Wintering Bees

way, when my super was nailed together, the edge of my 1/4 inch plywood cover did not come in contact with the elements, and the top of my inner cover was sealed off. Moisture can not get into the specially built supers. Two problems solved at one time, so to speak.

Inasmuch as I was installing my inner cover in this manner, I thought I might improve on something else. Here again this might lead to controversy. The problem with some of my hives is that the bees build comb on the top bars of my frames; and this is after I have taken my surplus supers off for the winter. With a regular inner cover, the space between this cover and the frames is only about one bee thickness. Now, if they build comb on top of these frames, that means you have no thickness at all. The bees restrict their own travel across the top of these frames. During the winter this might mean they would have a problem keeping in a ball shape, if this ball is near the top of these frames. So, what I have done with my built-in inner cover in my special super is move the inner cover up to two bee thicknesses. This gives the bees more room, which they are not so apt to bridge over with comb, and it gives more ventilation, which I was after in the first place.

Another improvement that I made was to install a larger hole for the bees to fly out during a warm winter day. With the regular inner cover, used with just a plain empty super, you have only a half-moon hole in the rim of the inner cover for the bees to get in and out of. Inasmuch as I only use these supers for wintering, I cut a 3/4 inch hole halfway up on the front of my special super. This gives the bees about twice the opening as the half-moon shaped hole. You will not see that hole in the picture; it is under the little tin roofs that I built. These roofs are to help in keeping rain and snow from getting into my hive. My hives, set up this way, can be in about two feet of snow and the bees can still get out to fly if they need too.

The final thing that I did that is different in my special winter super was to make it out of eight inch wide boards. This is only 7-1/2 inches wide, as most of you know. The idea here was that in the early spring I can set a quart jar of sugar water inside this super, over the center bee escape hole, and still get my cover on. Using empty supers for this, it took either two shallow or one deep super. However, long before I give my bees any sugar water, I give them granulated sugar. This will not freeze, and the bees eat it if needed. This also tells me which bees need food. If they eat the granulated sugar, then, when it will not freeze, I give them sugar water.

Now, just because I have a special super for wintering my bees does not mean that I throw everything else out the window. I still make certain that my bees have plenty of stores going into winter and close my entrances down to the smallest size. Too, if you will note on the picture, I also lay a strip of 3/4 inch wood in front of the entrance. (The one on the second hive blew off and is lying on the ground.) This strip, I feel, helps in keeping snow from building up in front of the entrance.

Here is something else you might like to converse about. I feel this added space above the two brood bodies, either with a plain empty super or my special super, makes something like a solar space. That is, an air space that is heated up by the sun shining on the hive on a warm winter day. If it is windy outside the hive the bees can still get up here and fly around a wee bit to stretch their wings and get them in shape for when they can fly outside the hive. Now, how about that, a bee hive with a built in gymnasium!

The special wintering supers in use.

The Honeybee

By CAROLYN D. GREEN
Falmouth, KY

Introduction

BEEKEEPERS AND THE MICROCOSM. Beekeepers are a strange lot of people. They get caught up in minute details, such as watching expressions on bees' faces as they come in for a landing. Beekeepers notice the nuggets of pollen carried into the hives, and then check out the source. They stay tuned into much of what passes unnoticed in the hubbub of the rest of the world. I know one beekeeper who says he never knew how important changes in the weather were until he became a beekeeper. Now he keeps tabs on not only the weather, but what the weather does — is the spring going to be warm enough to open the redbuds for brood buildup? Will there be enough moisture to provide nectar in the sweet clover?

Too often, the same systems that prove successful in one area can spell doom in another, for looking at the microcosm as beekeepers do is potentially a dead end. I have a dreaded vision of all the beekeepers of the world down on their knees peering into their hives. The beekeepers look and look and the hives and the bees get smaller and smaller, but the beekeepers, being of hardy, persevering stock, just keep on peering into the hive. They peer and peer until what they peer at is just a tiny pinpoint of black. But as they peer, and before many moons have passed, they recognize that what they thought was a pinpoint is really the black hole of the universe, and soon they have all disappeared into it.

Greedy Entrepreneurs and the Macrocosm. Now all this time, those entrepreneurs of the world who are of the greedy variety have been counting on the beekeepers' keeping their noses to the microcosm. This allows the entrepreneurs, who operate in the macrocosm, to do whatever is necessary to rake off profits while the beekeepers are not looking, profits taken at the beekeepers' expense...profits the beekeepers would object to if they lifted their heads up high.

Big Appetites with Blinders On. And while that scenario is taking place, the remaining population is going merrily about its business, assuming that the world is as it should be, that food will magically appear on the dinner table at the appointed hour. It is not that the consuming public doesn't care — they just don't have the information that would make them thoughtful citizens. They have been told increasingly over the years that food supplies will be furnished by our highly technological farming expertise, and someday, we will eat food not even touched by human hands in its growth cycle.

Why only today my mail box brought me the *Farm Bureau News*(11) with an advertisement for the 16th National Farm Machinery Show and Championship Tractor Pull at the Kentucky Fair and Exposition Center in Louisville. The theme of the show is "Farmland of the Future" and the picture is of a streamlined, laser-lighted tractor that looks deceptively like a military tank. I am not at all sure whether the picture is intended to prepare us for farming of the future as a military operation. In Grenada, where the People's Revolution was successful in regaining control of the food supply, farming is now under the reign of the military. We hope that could not happen in America. The picture in question may only depict the simplistic faith that farmers in America have in the technological salvation of farming. At any rate, while the 96% of Americans who are not farmers, and the 99+% who are not beekeepers, are assuming that food production problems belong to someone else, events have been happening that all people need to be concerned about.

The Plight of the Honeybee

So I urge you, Beekeepers, and all People Who Eat Food, be aware! Look up and around you! See the picture. Get a grasp of the magnitude of what has been happening. Listen to the whole score! For the world status of the honeybee serves as a barometer to tell us how we are doing in the areas of food supply and environmental health. And much has occurred out there while you were peering into the hive or your soup bowl!

Pesticides and Bee Pasturage. In the United States, the persistent use of pesticides, particulary Penncap-M®, the microencapsulated pesticide, has resulted in the extermination of bee colonies at the rate of 10% per year for the past number of years (4). The Golden Age of beekeeping in this country peaked in 1947 with 5.92 million hives and has steadily declined since (27). Agricultural practices in general over the past 50 years have caused the elimination of increasing acreages of melliferous flora (27) as well as the decline in the number of farms that at one time hosted honey plants (20). Since 1952, farms have disappeared at the rate of 2,000 per week (13).

Imported Honey. Although a world energy shortage exists, the United States continues to ship honey abroad. Then we import honey for our own use, much of it from Third World countries. In recent years we have imported more honey than we exported. In 1979 we experienced a net import of 12% of the world's honey market (18). What this means is that the United States does not produce enough honey for its own use.

"The United States is destroying 10% of it's bee

Malnourishment at Home and Abroad. Some people think the United States does not produce enough food for its own use, as an estimated one-fourth of our elderly have been found to be undernourished (22). But it is the system of food for profit that creates the starving and malnourished (14,12) of which the 25 million Americans below the poverty level are prime candidates (28). For the poor, the one in five persons on earth who live in "absolute poverty," do not have the cash to buy food (10).

Actually, the United States is not the breadbasket of the world, as some others commonly believe, but it does produce enough food at least to feed its own. Most of the world's population scratch out their own food or they don't eat (15). For some of those fortunate enough, in some countries of the world, that food includes honey.

Honey Production Around the World. One of those countries where large amounts of honey are being produced is the Soviet Union. There, bee

As Barometer

farms are encouraged and sponsored by the government, and honey production and food production are not seen as an either/or proposition as in the United States, but remain in equilibrium. That is, those practices beneficial for food production are also beneficial for honey production. In fact, the Soviet Union is so enarmored of the many virtues of the honeybee that the country owns 25% of the world's 40 million colonies of bees (24).

The People's Republic of China has been pushing ahead in honey production in recent years (23). In 1979 China **doubled** its output and is now a major exporter of honey (18). The Third World countries in the southern hemisphere are expected to become leading producers of honey in years to come. The tropical growth remains an untapped source of honey and beeswax. The United States, through the Peace Corps, along with Canada and the German Federal Republic, have for a number of years actively assisted beekeeping in the Third World Countries (21).

Honey and Malnourishment. Honey is seen as a major food source for malnourished people, due especially to its caloric content. When diets deficient in carbohydrates include proteins, those scarce proteins are concoverted by the body first to fill caloric need. When honey fills that caloric requirement, any available proteins can then be used as proteins. The goal of teaching hive management techniques to indigent people is to give them opportunities to be food self-sufficient (21).

Honey production is a good place to start in food self-sufficiency. Honey production is labor intensive, and labor is one factor of production abundant in Third World countries. Peasant farmers need not own large acreages of land either, it is said. Incredibly, fifty colonies can occupy one-fifth of an acre. Even adjacent landowners welcome colonies of bees placed on their properties, for in the Third World countries, it is recognized that honeybees greatly increase the productivity of both agricultural and uncultivated lands through pollination (21).

Pollination and Poisoned Food. The world over, the major value of the honeybee is in its pollination of necessary food products. S.E. McGregor, bee scientist renowned for his monumental work, *Insect Pollination of Cultivated Crops*, estimated that honeybees pollinate up to one-third of the entire world's food supply (16). Honeybees are the most valuable pollinating insects because they are the only insects capable of confinement and manipulation (26). That means we can put them in boxes and move them to where pollination is needed for food crops. Commercial beekeepers, then, perform an irreplaceable function in the continuation of our food chain (1).

Meanwhile, the United States chemical companies, not satisfied with snuffing out increasing numbers

colonies yearly due to pesticide poisoning. . . ."

of bee colonies per year, and unable to get around Environmental Protection Agency regulations against usage of many of the poisons produced in this country, are dumping the chemicals by the tons on unsuspecting Third World countries. The World Health Organization reports that an estimated 500,000 persons are poisoned and 5,000 human beings die each from those chemical pesticides we ship to farmers unknowledgeable about their deadliness (5). Heavily contaminated foods imported into the U.S. are some of the same ones dependent on honeybees for pollination — coffee, cacao, cotton (for oil), melons, cucumbers, squash and parsley (5, 21).

So far as utilizing the honeybee for pollination in the United States, it is estimated that the value of a single beehive is $4,400. In Oregon, where the diversified agriculture is the second largest industry, it has been figured that one-third of the food and farm crops **require** pollination. Those crops include pears, apples, cherries, plums, alfalfa, clovers, cane berries, specialty seedcrops such as parsley and kale, and vegetable crops, including squash, pumpkins, watermelons and cucumbers. Oregon in 1977 was the leader in alfalfa seed production in the country and boasted 47,000 colonies of bees to aid in achieving that goal (1).

Between 1963 and 1977, Arizona experienced a decline in the beekeeping industry from 116,000 to 60,000 colonies. The trend downward has been directly blamed on poisoning by insecticides. The same time period showed a concurrent decline in food and farm crops. The muskmelon acreage declined from 18,100 acres to less than 11,000 acres. The acreage of alfalfa seed dipped from 19,000 to 1,000 acres. McGregor warned us in 1977 that the problem of insecticide poisoning to bees is one of national significance. Millions of acres of soybeans, alfalfa, sweet corn, grains, vegetables, oil-seed and fruit crops are being sprayed with insecticides — crops that until only a few years ago, except for some of the fruits, were not so poisoned (17).

Now while the beekeepers have been microcosming around the bee yard, and the affluent with hunger pangs have been snapping their fingers for instant food gatification, this chain of events has grown increasingly more potent.

Macroencapsulated Review. From our world-view macroscope we get the big picture. The United States is destroying 10% of its bee colonies yearly due to pesticide poisoning, and losing additional hives to adverse agricultural practices. Honeybees pollinate up to 33% of our food supply. Losses to numerous crops were being experienced three years ago and predicted by McGregor and others to get worse if something were not done.

Meanwhile, the United States is exporting tons and tons of poisons to Third World countries and we receive much of the poison back in the form of contaminated food. Much of the hope of honey production in the future lies in those same countries.

To bee, or not to bee. How soon will it be before we begin receiving alarming reports of the demise of the bee population in Third World countries? With the bee population diminished in our country and in the Third World countries, what is the hope of producing adequate food for the world.?

Full Stomachs and the Honeybee. Now while in the United States the Department of Agriculture does not encourage honey producers and

(Continued on page 562)

(Continued from page 561)

The Honeybee

potential honey producers (8), the Soviet Union and the People's Republic of China both actively encourage honey production and the development of bee farms for research into honey plants and pollination. Both countries produce substantially more honey than the United States for consumption at home and export abroad (19). Notice that the U.S. is not sending our poisons to the Soviet Union and China to contaminate agricultural lands with. Those countries are too knowledgeable to let that happen. They know that their political strength lies in their ability to produce food, not only for their own people, but for export. Food production will unquestionably be the core of political strength of a country in the future. Empty bellies do not accompany a strong constituency.

S.E. McGregor knew the significance of the poisoning of honeybees. Now, my friends, you know also.

Plan for Action

Before you panic, there with your noses elevated, sniffing the shifts in the wind, asking yourselves what you, Beekeepers and/or Food Lovers who like to eat real food, can do in the face of such an apparent conspiracy to exterminate the honeybee and limit our food supply, let tell you first what **not** to do. Don't try moving to the Soviet Union or China. Those countries have enough mouths to feed.

Democracy at Work. The thing I suggest you do is write your Congresspersons. Tell them that you have learned that the United States Department of Agriculture has now come out in favor of organic (non-poisonous) farming (25). Inform them that organic farming saves energy, rebuilds soil fertility, is economically feasible, produces clean, healthy food and products, and best of all, does not kill honeybees on whom we depend for pollinating one-third of our food supply. Tell your Washington representatives that you want the sale of poisons to Third World countries stopped so you can drink pure coffee (6).

Write the Secretary of Agriculture in Washington and your state Commissioner of Agriculture. Tell them — well, you know what to say now. Phone your state bee and honey specialist. Bend the ear of your USDA county extension agent.

Now those contacts will very likely result in nothing concrete that you can put your finger on right away. Don't be dismayed. This is only your first step in saving the honeybee. And at the least, this step assures you of the satisfaction of having performed one element in your patriotic responsibility.

Share the News. The next element in participating actively in your governmental process is basic: Talk to your friends, your neighbors, the folks with whom you drink that coffee contaminated with 94 different pesticides (5). Talk to anyone who will listen. Don't be put off by those who fear the sting of bees. Most stings are made by wasps, not honeybees (2). Don't be apologetic.

Form Coalitions. Take the message to your organizations. If you don't belong to an organization, join one, or form one. Churches often have groups organized around world hunger issues. Find local chapters of Bread for the World, Loaves and Fishes, Clergy and Laity Concerned, or Anti-Hunger Coalitions.

Join a farm organization. You don't have to be a farmer presently to join. After all, most of us have a rural heritage. Join the U.S. Farmers Association, Women Involved in Farm Economics, Rural America, National Farmers Organization, Rural American Women, American Farm Movement, American Agricultural Women, your state New Farm Coalition, the National Family Farm Coalition, and the National Coalition Against the Misuse of Pesticides (7). Join with the People's Initiative on Land, Food, and Justice. Go to meetings. Tell what you know about world food production and the connection with the honeybee. Be intense. Sound alarmed. We are alarmed! We are scared!

Make a commitment. Now, take a deep breath. Close your eyes and give a solemn promise to S.E. McGregor* that you will do all you can to see that his fears do not come to pass. We will not allow commerical beekeeping to be exterminated along with the honeybee, nor will we allow 33% of our world's food supply to vanish. We will guard the honeybee! We will nurture the honeybee! We will bee-ware!

Take Legal Action. The next step is where you can use your imagination. Look into legal means of halting pesticide usage. Talk with the Legal Aid Society or a private attorney about petitions, injunctions, stop actions or other ways of legally preventing the further spread of pesticides in your area. File injunctions against those involved with farm use of pesticides: Chemical companies, farmers (particularly the giant corporate farms), and USDA county extension agents who encourage its use. File injunctions against non-farm use of pesticides —. on which one-half the total money spent each year is used (3). File against highway departments to prevent their spraying poisons along roadsides. File against power companies to prevent their spraying herbicides under power lines. File against sanitation departments to prevent their spraying entire neighborhoods and communities.

An injunction or some form of stop action is best filed by a number of people. There's just more strength behind the voices of fifteen persons than from one. So form a coalition of your neighbors or church members to take these legal actions. A stop action is not a permanent solution, but it does give you time to figure out your next step, and it does give the agency or corporation filed against time to work out another solution. And there are solutions. There are non-poisonous means to accomplish anything done presently with poisons.

In Lincoln County, West Virginia, for instance, a group of tobacco farmers, upset over the power companies' spraying of herbicides on their farm crops, filed an injunction. Then they worked out a contract between the power company and some people who wanted paid employment to cut-clear the area under the power lines by hand. That arrangement accomplished several goals, but in particular, it meant that the poisons are no longer used there to kill unwanted vegetation (9).

Use your imagination and be cooperative. Solutions can be found without compromising your position that poisonous chemicals kill.

Conclusions

Remember, you as a person who

As Barometer

eats food have certain rights. You have a right to eat food. You have a right to eat uncontaminated food. Insist upon it.

If you are a beekeeper, you have certain rights. You have a right to produce honey. You have a right to keep bees to pollinate one-third of your food. When beekeeping issues have been taken into the courts, bee have consistently won. Whether your bees stay on your property or go elsewhere, bees perform an irreplaceable function.

Keep in mind that everything on this beautiful earth is here for a purpose and it all inter-relates. Bees are here for a purpose. So are you. Do it. Nurture honeybees and our food supply.

References Cited

1) Burgett, Michael. "Pollination and Apiculture in Oregon." *American Bee Journal*, 117:302-03, May 1977.

2) Caron, Dewey M. "Bees, Beekeepers & the Law." *Gleanings in Bee Culture*, 108:93-94, February, 1980.

3) Caslick, James W. "Non-Farm Pesticide Use." *Gleanings in Bee Culture*, 108:502, September, 1980.

4) "Deadly Little Time Capsules." *The New Farm*, 2:8, February, 1980.

5) DeCrosta, Anthony. "The Two Faces of Pesticide Exports." *Organic Gardening*, 27:79-86, October, 1980.

6) Ibid. And while you're at it, help stop the free trade in toxic pesticides by writing to Donald King, Director, Office of Environmental Health, Department of State, 2201 C St., NW, Washington, D.C. 20520.

7) Green, Carolyn D. For a listing with addresses of these and other organizations, coalitions and networks, send $1.00 with SASE to P.O. Box 62, Falmouth, KY 41040.

8) _____. "Honey Production and the Structure of American Agriculture." Statement to Secretary of Agriculture Bergland, January, 1980. Send $2.00 to above address for this first hand account of trials of a prospective honey producer.

9) Hensley, Nunna. W.Va. Food-Law Project, Morgantown, W.Va. Phone conversation, January 7, 1981.

10) "Identifying a Food Policy Agenda for the 1980's: A Working Paper," January, 1980. Interreligious Taskforce on U.S. Food Policy, 110 Maryland Ave., NE, Washington, DC 20002.

11) *Kentucky Farm Bureau News*, 44:5, January, 1981.

12) Lappe, Francis Moore and Joseph Collins, *Food First: Beyond the Myth of Scarcity*. Houghton Mifflin Company: Boston, 1977.

13) Lerza, Catherine. *Agriculture Fact Sheet*, 1:1. National Family Farm Education Project and Earthwork/Center for Rural Studies, Washington, D.C., 1980.

14) _____, and Michael Jacobson. *Food for People, Not for Profit*, Ballantine Books: New York, NY, 1975.

15) Lutz, Charles P., ed. *Farming the Lord's Land*, Augsburg Publishing House: Minneapolis, MN, 1980.

16) McGregor, S.E. *Insect Pollination of Cultivated Crop Plants. USDA Agriculture Handbook No. 496*. Washington: Government Printing Office, 1976.

17) _____. "The Bee Poisoning Problem in Arizona and Its National Significance." *American Bee Journal*, 118: 235, April, 1978.

18) Patty, Gordon E. "World Honey Production Seen Below Consumption." *The Speedy Bee*, 9:9-10, 15-16, December, 1980. A report of the USDA-FAS, Horticultural & Tropical Products Division, Commodity Programs, Washington, D.C.

19) _____. Phone conversation, January 7, 1981.

20) Ritchie, Mark. *The Loss of our Family Farms: Inevitable Results or Conscious Policies?* Free Spirit Press: San Francisco, CA 1979.

21) Robinson, Gene. "The Potential for Apicultural Development in the Third World." *American Bee Journal*, 120:399, May, 1980.

22) Rothenbuecher, Bea. "Wage Peace — Fight Hunger." Bread for the World, et al., 207 East 16th St., New York, NY.

23) Schumacher, H.H. The Giant Awakes — Chinese Honey Trade." *American Bee Journal*, 120:605-07, 611, August, 1980.

24) Shabarshov, Ivan. "Beekeeping in the USSR." *American Bee Journal*, 119:716-18, October, 1979.

25) *USDA's Report and Recommendations on Organic Farming*. The Office of Government and Public Affairs, Room 6009, South Building, United States Department of Agriculture, Washington, D.C., 20250.

26) Ware, George W. "The Indispensable Honeybee — A Summary." *American Bee Journal*, 113:128-29m April, 1973.

27) _____. Ibid., 113:173, May, 1973.

28) "Who Is Hungry in the U.S.A.?" Bread for the World. 207 East 16th St., New York, NY, 1980.

*S.E. McGregor, Pioneer in honeybee pollination research, died February 4, 1980.

Monthly Honey Report

(Continued from page 556)

through the summer months in Kentucky. Prospects are poor for the remainder of the season. Populations of bees are below normal. Moisture has been adequate in most regions of Kentucky. Honey sales are somewhat improved over the past month. All honey prooduced in Tennessee is amber and is about half of a normal crop. Bees are very short of stores at the end of August but prospects are good for a fall honey flow. Honey sales are good and the demand for white honey will increase the price again.

Region 7

Reports from beekeepers in Arkansas indicate a 50 to 60 pound average for the spring crop. Widely variable reports on soybean honey flow as of end of August. Rainfall is normal in Arkansas and there should be a good honey flow from the fall plants.

(Continued on page 578)

Bee Talk

By DR. RICHARD TAYLOR
Trumansburg, NY 14886

I DON'T KNOW which is better, spring, when everything is coming to life again, or late summer, when everything is at its peak. I can gather sweet corn from my garden now, put it in the already steaming kettle, and have it for supper a few minutes after it was plucked from the stalk. Salad combinations of every sort of herb and fruit are now possible. Or course comb honey, at any time of the day, and at no cost, goes without saying. Down by the lake the woods resonate in the evening to the noise of the katydids, and my kitchen, day and night, is enlivened by the chirping of crickets. Every year at this time I gather a few from the yard, and keep them in a little Chinese cricket cage by the hearth, where they seem as happy as I am. I usually have a few left, even after the frosts of October have chilled everything else to silence. It is a good time.

Not everything that reaches its peak now is a joy to the beekeeper, however — and that observation introduces my topic for today, which is wax moths. I don't think I have ever talked about wax moths in this colum, but it seems to me that every time I talk to bee meetings someone is sure to ask me what I do about wax moths. I think I know quite a lot about them, from a rich experience with them, so I guess it is time I got around to that not very inspiring subject.

I once read that wax worms are the only living things that eat wax. I think that statement is a little misleading, though, because it is not the beeswax that they really go for. They are after proteins, which means, more than anything else, pollen. Maybe they should be called pollen worms. And they prefer dark combs to light ones, because there are substances in the dark combs other than beeswax. They hardly damage plain foundation at all, though I have seen instances where they chewed it up a bit, before abandoning it. I have never known a box of foundation to be consumed by wax worms, even when exposed to them. Sometimes a super of drawn combs can sit around for years without being attacked by wax moths, in case the combs are light, that is, undarkened by years of use by the bees. Dark combs, on the other hand, will almost surely be attacked if not protected, especially if there is pollen in them.

Wax moths are always described in the literature of beekeeping as enemies of bees but this, too, is misleading. A strong, queenright colony can always protect itself against wax worms, especially if it is a colony of Italian bees. Wax moths get in only if the colony somehow gets weakened and demoralized. What particularly attracts the moths is a colony long queenless. Such a colony begins to dwindle, the bees that remain become listless, as if without purpose, and of course the wax worms soon begin to gain an advantage. After awhile you can find the few remaining bees and the increasing numbers of wax worms living side by side, the bees having become too dispirited to do anything about them. And soon after that the hive becomes a solid mass of webs, cocoons and frass. It is a depressing sight.

So the moral is, don't let your hives get queenless. A queenless colony must somehow be requeened promptly or, if it seems too late for that, combined with strong colonies.

Even after wax worm damage has begun, and there is a considerable amount of webs in the combs, you can set them on a strong colony and the bees will clean everything up and throw out all the worms and cocoons. Of course the combs should not be badly damaged. If they are, then you have let things go too long, and the only thing to do is burn the combs up or, if you have the patience, melt them down. It is suprising, however, how thoroughly and quickly a strong colony will clean up a super or hive body infested with wax worms. Of course if there are considerable masses of wax worm webs between the combs, then it is only common sense to pull them off before turning the job over to the bees, for it is a lot less work for you than for them. Then they can finish the cleanup job.

What wax worms don't like is fresh air. Even dark combs will not be attacked in hives that are lying in the open air on end, so that the combs are exposed top and bottom to fresh air. That is, however, an invitation to other things, such as mice.

I have known commercial beekeepers who stored all their extracting supers outside and never had any wax moths or mice. Here is how they do it. They make a frame, and cover it with hardware mesh, which bees can go through but mice cannot. Then they stack the extracting supers, still sticky, on this frame, which is raised up so the air can circulate underneath, and cover the supers to keep the rain out. These supers, stacked on this mesh frame, are stored on the north side of the honey house, where the sun hits them least. The bees, in a couple of days of frenzy, clean every last trace of honey from the supers, and the wax moths leave them alone. Why? Because it is fairly cool there on the north side, and fresh air circulates up through the combs. It is a good system.

Wax worms like dark, closed spaces. I once left a comb on the barn floor for a couple of weeks, and when I went to pick it up, found the underside destroyed by wax worms, which had not touched the exposed side. Even moth crystals do not always repell wax worms in closed spaces. But if you have to stack hive bodies and supers containing dark combs inside, where they will be magnets to wax moths, put moth crystals in them. The way to do this is to lay newspaper over the top bars, and spread "paradi" crystals on the newspaper. ("Paradi" is short for "paradichlorobenzene," I think. You can buy it from bee supply places.) But it's best not to use the stuff. It is harmless to people, but the combs can pick up the odor, and when you go to hive a swarm on those combs, you may find it not so easy.

The other way to keep wax worms out is to store combs where it is cold, that is, below freezing. Wax worms are no problem in winter. **Fall** is when they are a problem. They can riddle a lot of combs before winter comes to put a halt to them. In spring there are not enough of them around to do any damage.

So what's the answer to the question, "What do you do about wax worms?" The answer is: "Have your dark combs on strong, queenright colonies during warm weather, and store them where it's cold during winter." Don't have brood combs in hives stacked around in late summer or fall; have them on queenright colonies. And as for extracting supers, have them on the hives as late as feasible. They can be stacked around for maybe two or three weeks in the honey house before the cold weather comes, without much risk, but not much longer.

Notes From The Straw Skep

By BESS CLARKE
50 Lycoming Street
Canton, PA. 17724

ONE OF THE highlights of our summer was an unexpected visit from a young couple who were riding across the country on bicycles. Bill and Julie, both natives of Pennsylvania, who have been working in Wyoming for several years, decided to spend this summer coming east on bikes and they stopped to see us early one evening when they were almost at the end of their trip.

Their itinerary took them to Yellowstone and Glacier National Parks, the Tetons, Jackson Hole, Banff, Sault Ste. Marie, across Ontario, through New York state and Pennsylvania to their parents' homes in State College, and Hershey, PA. The four thousand mile jaunt took a little less than three months, including two and a half weeks of sight seeing at three locations. They averaged eighty miles a day. They'd come a hundred miles the day they reached our house and they went another hundred the next day, over Pennsylvania's hilly terrain.

Neither of them had much experience at cycling before their journey although both were in good physical condition. (The last time we saw Bill he was winning a cross country ski race.) They studied guides and manuals, and assembled their own 15 speed bikes from component parts which they ordered from supply houses. Their trip was remarkably free of mechanical trouble. Julie had to replace a bearing, and Bill had four flat tires.

They stored all their gear, including a tent, sleeping bags, cooking equipment, food, and clothing, in saddlebag containers suspended over the wheels of their vehicles.

Their specially designed shoes had cleats to hold them to the pedals and ventilated leather uppers. They wore wool shorts with leather reinforcement in the crotch, wool sweaters, and two piece hooded rainsuits which Julie made from goretex fabric. Plastic bags kept their gear dry on days when they rode in the rain.

They traveled through rain, hail, sleet, snow and extreme heat; and they agreed that the most difficult part of the trip was pedaling against a constant wind. One windy day they gave up and accepted a ride from a man in a pickup truck. He took them 25 miles to Minot, North Dakota.

They found that people were friendly and generous. They were offered food many times, including two steak dinners. (At our house they got a skimpy meal of leftovers.) Most motorists were considerate but they had a couple scares when they were forced off the highway by passing cars.

They arranged a map of each day's journey in a plastic case so it was available for easy reference, and they chose back roads where traffic was light.

Bread, cheese, honey, and peanut butter were staples of their diet, augmented with fruit and vegetables they purchased along the way. They cooked hot cereal each morning, and specialized in noodle variations for their evening meals. They stopped at bakeries and ate lots of doughnuts along the way.

They laughed as they told of people's reactions to their trip. There are three questions everyone asks, they said. "Where are you from?", "Where are you going?", and "How far do you travel each day?". To a fourth question, "Will you do it again?" they said, "Probably not. But it was a great experience!"

It was delightful to hear about their travels although I must say it didn't make me want to go right out and buy a bike. We added a bit to their trip by taking them to pick blueberries on our mountain.

Recipe

At the Eastern Apicultural Society meeting, I got involved in a discussion of how to reduce the liquid in converting recipes to use with honey.The standard practice is to lower the liquid by 1/4 cup for each cup of honey used. That isn't always true, of course. Sometimes more moisture makes a better product. I have a good recipe for "Honey Bee Pies" given to me by Arlene Ormsby, which proves the point. It's a cookie recipe and it uses both buttermilk and coffee.

Two cookies are put together with a frosting and the resulting confection is wrapped individually in plastic film. It's a popular sweet in Pennsylvania Dutch country where it's known as a whoopee pie.

HONEY BEE PIES: 1/2 cup margarine, 1/2 cup honey, 1/2 cup sugar, 1/2 cup buttermilk, 1 teaspoon soda, 1 egg, 1-3/4 cups flour, 1/2 cup dry cocoa, 1/3 cup coffee liquid, 1 teaspoon vanilla. Mix ingredients together and blend well. Drop by teaspoonfuls onto greased baking sheet. Bake at 350° for 8 to 10 minutes. Cool on waxed paper. Sandwich two cookies together with filling and wrap individually.

FILLING: 1/2 cup milk, 2 tablespoons flour, 1/2 cup margarine, 1/2 cup honey, 1 teaspoon vanilla. Cook milk and flour to make paste, stirring constantly over low heat. Cool. Cream honey and margarine together, add paste, beat 5 minutes at high speed, spread on cooled cookies.

Beekeeping Technology

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

The Quebec Bee Escape Board

IN RECENT ARTICLES, I made a reference to a bee escape referred to as the "Quebec Bee Escape". It is not a very complicated device and probably has other names in different areas. It is manufactured and sold by a few companies in North America. Quite a few individuals requested information concerning the construction and use of a bee escape of this type. Hopefully this discussion will answer most of those questions.

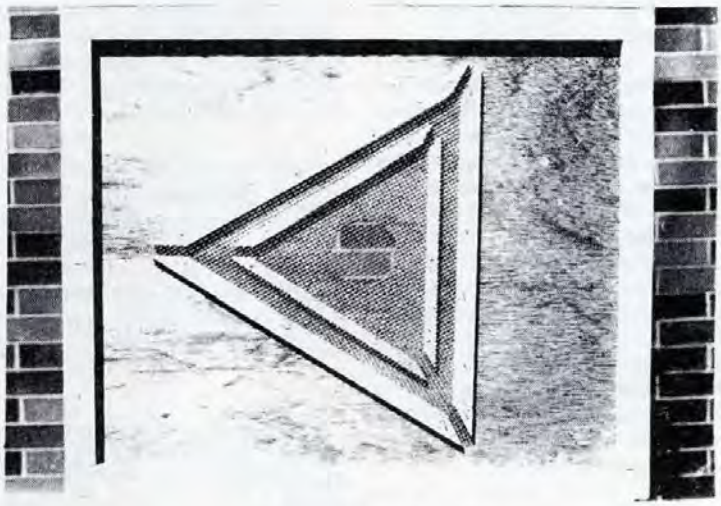
The overall dimensions of the escape are 16½" wide x 19⅞" long x 1¼" deep. The inner plywood core is made of ¼" plywood and is centered in the outer wooden rim. This makes the inner sides of the rim ½" deep on both sides of the escape board. The escape hole is centered in the plywood core and is 2¼" in diameter.

The larger triangle is made from stock measuring ¼" x 5/16". Each of the longer sides of the outer triangle are 12¼" long. Openings at the apices of the outer triangle are ¼" in width.

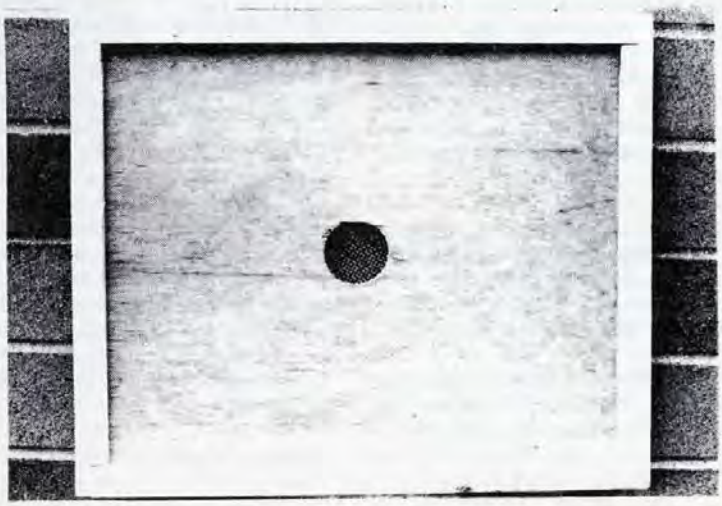
The inner triangle is separated from the outer triangle by a distance of ¾". The inside triangle is made from ¼" x ¼" stock and has sides that are 7¾" long (outside diameter) Openings at the apices of the inner triangle are ¼" wide. Both triangles are covered by eight mesh hardware cloth. The ends of all triangle sides are cut at 30° angles.

The Quebec Bee Escape serves the same function as an inner cover with a Porter bee escape in the hand hold. The side of the Quebec escape board with the triangles is placed next to the brood nest in the colony. Bees in honey supers pass through the escape hole and eventually find their way to the openings in the triangles. Occasionally bees will find their way back through the outer triangle but few bees successfully find their way back through both triangles. As with other types of escape boards, the beekeeper should close all openings in supers above the escape board to prevent bees robbing supers. Beekeepers in warmer climates should be aware that the comb may soften and allow honey to leak from combs on very warm days. As with other escape boards, a major disadvantage is the necessity to make two trips to the outyard; one to install the escape board, and a second trip a day or so later to remove the honey crop and the board. The beekeeper should also check supers for brood since bees are reluctant to abandon brood.

This escape board is not a new idea and has been successfully used by beekeepers for quite a while. Many modifications of the board are possible. As with other escapes, the basic idea is to allow the bees a one-way passage from the supers with the fewest bees possible being able to return. □



Lower side of escape.



Upper side of escape.

Questions and Answers

Q. I have not had much luck keeping my bees from swarming. I have tried several methods, including reversing brood boxes, and requeening. I am now considering killing off my bees in the fall, saving the lower brood box with honey and pollen and buying packages of bees in the spring to start out on these lower brood boxes. I would like to find out what I can use to kill off the bees in the fall, so the honey and pollen is safe to use. C.W. Indiana

A. We are sorry to advise that we have no chemicals which will kill the bees yet leave the combs and honey free of contamination. Researchers are seeking a chemical which would be practical for this purpose but so far, nothing has been developed.

★ ★ ★ ★ ★ ★

Q. Would charcoal be O.K. to start the bee smoker and use corn cobs for smoke? G.E. Kentucy

A. Charcoal may burn too hot for the smoker and would damage the metal canister. Corn cobs with a piece of paper starter would be more satisfactory. Other smoker fuels are wood chips, dry, rotted wood, wood shavings, cotton cloth scraps, and burlap.

★ ★ ★ ★ ★ ★

Q. What is the best way to clean leather bee gloves when they get covered with honey, propolis and wax? R.L. North Carolina

A. We suggest a strong soap, preferably one recommended for leather goods. Allow the gloves to dry in the open air or away from artificial heat.

★ ★ ★ ★ ★ ★

Q. Can you tell me where I can buy some bee trees such as the pea tree, Russian olive, Armur maple, French pussy willow and others? P.B. Tennessee

A. Bernie Hayes, the source of some of the best information I have received about nectar bearing trees and shrubs suggests you try Vernon Barnes & Son Nursery, Box 250L, McMinnville, TN 37110. They have more flowering trees at a good price than the regular nurseries.

In the West try Forest Farm, 990 Tetherow Rd., Williams, Oregon 97544 for flowering stock.

Often beekeepers can buy hedge trees cheaply and set them out individually for nectar. The pea (*Cargana*) is one of those, as are the Armur maple and Russian olive, in most instances.

★ ★ ★ ★ ★ ★

Q. Please advise where I can purchase seedlings or one or two year old Sumac plants. C.T. New York

A. It is unlikely that these would be carried in a nursery. About the only source we can suggest is to gather them from the wild. Staghorn sumac (*Rhus typhina*) is a non-poisonous sumac which has brilliant fall foilage and is a nectar source. Before transplanting wild plants you should consider that the sumac is often a nuisance and care should be used in placing the shrubs as they have the potential for outgrowing their surroundings.

★ ★ ★ ★ ★ ★

Q. I have six hives located within a short distance of where I wish to plant several Reo Castor Bean Plants. I need information as to what harm (if any) to my bees will this present. Also, the effect it would have on humans if the honey containing this pollen was eaten? I would appreciate any and all information you have concerning this subject. J.C. South Carolina

A. To our knowledge no harm has come from bees gathering pollen from castor bean (*Ricinis communis*). The plant is a native of India and is planted as an ornamental and in a few places as a source of the oil from the bean. No nectar is usually gathered. The plant and the beans are harmful to humans if eaten.

★ ★ ★ ★ ★ ★

Q. Does it hurt colonies of bees to trap pollen? How much is it safe to collect?

How much pollen does a strong hive produce during the year, on an average? A.S. Montana

A. The secret of pollen collection from a colony of bees is to not leave the trap on the bees too long at a time. If pollen is coming in steadily in the spring, as observed by watching the returning bees at the entrance, the pollen screen can be placed in the entrance for up to a week or ten days. Another possible trapping period may be during the main honey flow and during a fall honey flow. Trapped pollen should be collected every other day from the tray.

A colony will at least partially compensate for the pollen lost to the trap by increasing the number of pollen gatherers. As expected, pollen trapping may decrease the amount of nectar collected during the honey flows if the trap is left on for an extended period. Some traps create congestion at the hive entrance which interferes with the coming and going of foragers and may contribute to swarming.

Often surplus pollen is gathered in the fall for spring use. A limited amount of pollen trapping should not create a problem as pollen sources are often abundant at this time of year. In the event the colony is not wintered over this caution is less important. Pollen stored in the combs loses its nutritional value rapidly.

The average amount of pollen gathered during the year is so widely variable that an accurate estimate is nearly impossible. The amount gathered is dependent upon the weather, the types and amount of local pollen sources, the strength of the colony, the quality of the pollen and total amount of brood reared. Colonies vary in pollen gathering habits. I have read of pollen being collected in the amount of "several bushels" during a season.

I am not familiar with Montana but your trees and shrubs may be of less importance as pollen sources than the wildflowers such as dandelions, knapweed, and the mustards.

The Other Inhabitants Of A Beehive

By SUE ANDERSON GROSS
St. Charles, Illinois

"OUCH!" I SWAT my left forearm. "Ouch again!" I slap my right arm and then shake my head wildly, as I feel yet another stab, this time at the back of my neck. Hurriedly I retreat from the open beehive I've been tending. However, it's not the bees that have chased me away. I'm not being stung at all; I'm being bitten by ants.

The ants are furious with me, because I disturbed their nest when I opened the hive. They had taken up housekeeping on top of the inner cover, and when I pried up the outer cover, they had fled every which way, some of them carrying their brood of white eggs to safety and others launching an attack on the enemy — me.

The ants are a small, blackish species, about an eighth of an inch long. Not being a trained entomologist, I don't know their scientific name. I wish I did, because I'd like to know more about them than I've gained by observation. I'm not even sure what attracts these ants to beehives in the first place — whether it's the honey, the lure of a warm, dry nesting spot, or something else entirely.

The more I work with bees, the more fascinated I become with the many other inhabitants of beehives, ranging from ants, to spiders, moths, and mice. I suppose the anthropomorphic temptation to see a beehive as a big hotel has gotten to me, but I'm fascinated by the many disparate lives being lived in those wooden boxes.

Spiders are very common around the hives. They love to wait for unsuspecting prey under the overhang of the outer covers. I counted five grass spiders* staked out in a row on the front of one hive. Each large, greenish-brown spider had spun a funnel web that opened on its topmost end into the crack between the outer cover and the top box. When I tried to aim my camera at the spiders, they retreated out of sight into this handy protective crack. The bottom end of the spiders' retreats opened onto the flat front of the hive. When I scared a spider by tapping on the hive, it jumped out of its web and in a flash had dropped to the ground on a thread of silk.

A grass spider's web actually consists of two parts. The funnel lair, where the spider waits for its prey, is supplemented by a sheet web for trapping insects. Virtually all the grass spiders on our hives suspend their sheet webs on an angle between the outer cover and the box below. Once in a while, a grass spider will come up with a novel place to spin its two-part web. I saw one spider which had taken over a round entrance hole bored into one of our boxes. This hole was about an inch across, and next to it, nailed to the hive, was a bent square of tin, about three inches square, which we had used to close the hole up during the winter. The grass spider had fit its funnel web into the entrance hole. Then it had anchored its sheet web over the entrance hole, using the piece of tin as support. The bees had not yet discovered the spider's intrusion, because they were using the entrance hole in the box below. What would happen when they moved up, I could only conjecture, but meanwhile the spider sat, looking out the entrance to the hive, seemingly quite content.

My presumption is that grass spiders prey on bees, but I have yet to actually **see** a bee caught in a grass spider's web**. On the other hand, I have seen plenty of bees caught in the webs of a cobweb spider which frequents our hives. As far as I've been able to identify it, this spider belongs to the family *Theridiidae*, which includes the common house spider and the widow spiders. It has the same body shape as these spiders — a very fat, pointed abdomen and a tiny cephalothorax. It is a handsome spider, about a third of an inch across the abdomen in size, and marbled in black and white swirls. It builds a maze web anchored by long lines, which are sometimes fastened to irregularities in the stacked boxes and sometimes to tall grass or weeds growing beside the boxes. It hangs its tan colored egg sacks in its webs, where they dangle alongside abundant bee corpses. I have the idea that this spider also preys on the grass spiders with which it shares its territory. At least I once saw a cobweb spider seemingly feasting on the body of a grass spider suspended in its web.

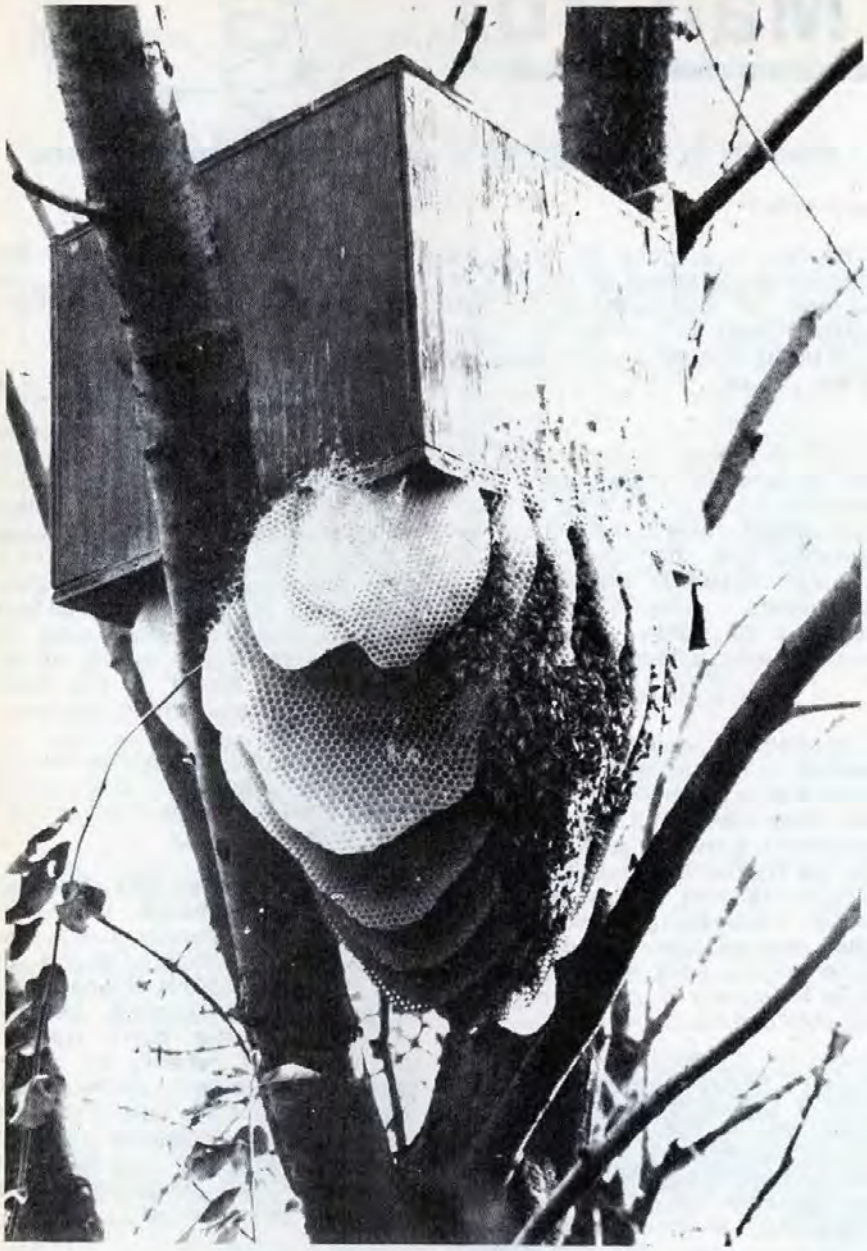
The grass spider and the cobweb spider are the only two really common spiders around our hives. However, we do encounter on an occasional basis, an amazing variety of other spiders, most of which I have yet to identify. An occasional visitor is the parson spider, *Herpyllus ecclesiasticus*, which I have found hiding in a small maze of white silk on the top of the inner cover. This is a ground spider, which usually lives under stones but is also common on the walls and floors of houses. Given its propensities, it doesn't surprise me that it should find congenial housing in a beehive.

Daddy-long-legs, near relatives to the spiders, are abundant. With their up-in-the-air walk, they are unmistakable. We see both red and brown species. They like to roam over the sides of the hives, and sometimes they get caught in a spider's web, where, I suppose, they make the spider a meal. They also like to rest in the sheltered recesses created by the finger grips on the boxes. These han-

(Continued on page 569)

*Genus *Agelenopsis*. My identifications are tentative, since I make no claims to expertise. One of the more authoritative guides to spiders is Willis J. Gertsch's *American Spiders*, 2nd ed. (Van Nostrand Reinhold, 1979). Also useful is the nicely illustrated Golden Guide *Spiders and Their Kin* (Western Publishing, 1968).

**According to Gertsch, grasshoppers provide the grass spider's main food.



The Idea At Least Worked

Believe it! The bait box idea works. The bees didn't go inside like they were supposed to, but they came to stay. It's simply an empty box about the size of a brood chamber, closed on all sides but with a one inch round hole on the front where the bees were supposed to go in. Perhaps another hole in the bottom might have helped. The base is easily removable so that any bees inside could have been emptied into a hive.

Leaving it in a tree close to where I had kept a few hives a year or so ago, it was a real surprise to discover this swarm several months later. Although I had placed the box there deliberately as a bait box, I am enough of a skeptic to have doubted that it was really going to work.

The Other Inhabitants Of A Beehive

(Continued from page 568)

dholds, it seems, are virtual mini-environments all their own. Most beekeepers have probably noticed that wax moths will hide there; various other moths and spiders deposit their cocoon and egg cases there; while one handhold that caught my eye this summer as being unusual harbored the multi-chambered mud nest of a mason wasp.

Paper wasps frequently build their nests in piles of unused supers. On occasion, we have had to postpone breaking down a stack of boxes to take them to the beeyards because the wasps have established prior claim. Sometimes we come across mice nests in stacks of boxes too. Even though I don't like the holes the mice chew in the comb, I always feel a little guilty when I send a mother and her babies scurrying.

On the other hand, I never feel remorse at destroying wax moths. Whenever I see one hovering (I'd like to say lurking) under the lip of the outer cover or flattened against an inside corner of the hive, my blood races and I reach out to smash the moth with my hive tool. This notorious beehive pest is one insect no beekeeper likes to see. It's difficult to be dispassionate about wax moths, once you've witnessed the devastation they can wreck. Cleaning out a hive packed solid with cocoons is not a task for the squeamish. It would probably behoove me to drop my distaste for wax moths long enough to admire their niche in nature. They are certainly among the most highly adapted "other inhabitants" of a beehive, and that should make them worthy of a beekeeper's curiosity, if not charity.

Gleanings Mail Box

Suggests Sting Information

Dear Editor:

As a relatively inexperienced, hobbyist beekeeper I have read about many, and experienced some, of the problems which take the joy out of beekeeping. With one exception, the most common problems are examined frequently in great detail by a variety of well qualified individuals who offer many choices of solutions which will prevent, remedy or minimize the problems. That one exception seems to me to be bee stings. This problem is rarely addressed, and then usually very briefly and with information that is often vague, incomplete, questionable or inconsistent with the facts. For the hobbyist beekeeper who has four hives, gets stung three times a year and develops an unhealthy sensitivity to bee venom, the usual solution that is recommended (stated or implied) is to sell your hives, cancel your subscription to *Gleanings* and subscribe to *TV Guide*.

There is a much better solution which should be, but isn't common knowledge to all beekeepers.

Two years ago after experiencing an allergic reaction to a bee sting, I tried unsuccessfully to sell my hives. During this time I was directed to Dr. Mary Loveless and made arrangements to be desensitized by her. Her program consisted of visits on two different days, about one week apart, for carefully controlled injections and bee stings. Since then I have normal sensitivity, have kept my bees and have enjoyed beekeeping more then ever.

Don't you think that many other beekeepers would enjoy a greater knowledge of human immunology, identifying specific symptoms which indicate individual sensitivity, controlling sensitivity with bee stings, and desensitization programs using pure bee venom? As a result of my experiences, I feel stongly that if the information which is presently available was made known to all beekeepers, those with sensitivity problems could return to normal.

John K. Sutor
Brookfield, CT

Women In Beekeeping

Dear Editor:

I'd like to respond to Dr. Grant Morse's observations on the role of women in beekeeping in his "Management for Success Part I" article in the August issue of *Gleanings In Bee Culture*.

Dr. Morse's descriptions of beekeepers in male terms and references to women's non-participatory roles in the industry are outdated and inaccurate. The industry includes many female beekeepers — either in single person business or hobby operations or husband-wife partnerships.

Women are working in beeyards, joining in the decision making processes of family businesses and putting their names on the line when establishing credit and borrowing money. Women have assumed leadership positions in local, state and national beekeeping organizations. Plus, women serve as officers of associations, work in research and write for state and national beekeeping publications.

Here in Wisconsin, women have served in leadership capacities in county organizations and the Wisconsin Honey Producers Association. Women have spear headed promotional and marketing efforts, testified regarding legislation, provided valuable education and information sessions on beekeeping, honey and pesticides, along with speaking to the industry and the general public on issues of concern to beekeepers. Many women couple these efforts with the hard physical labor of working in the beeyard, either alone or side by side with their husbands.

Women share in the pride of the profession and it's disappointing to have our efforts and contributions so blatantly disregarded. It's unfortunate that Dr. Morse thinks success in beekeeping can only be measured in the male gender.

Evy Peterson-Nerbonne
Clear Lake, WI

A Clean Water Source

Dear Editor:

The first question on page 490, Question and Answers, of the September 1981 issue can be given a more complete answer.

In September of 1964, *Gleanings In Bee Culture* 92 (9): 541 and 572, I described bee hives surrounded by water sources consisting of mosses holding drops of water after a morning mist. Honeybees did not collect water from nearby patches of water-holding moss, nor from very distant ones, but chose wisely to work about 75 feet from the hives, where the fecal deposits and dead bees near the fronts of the hives would not endanger their brood if the water sources were used within the hive.

I think that author another came to the same conclusion *Gleanings* 97 (4)220, but I do not have access to a copy of that paper.

My own conclusion was "Diseases may have eliminated strains of honeybees that persisted in collecting water from sources only a few feet from hives. If this is what determines favorable distance, we have evidence of one more trait of character that reflects an advantageous adjustment to the hazards of the environment. We have also a hint for practical application, in that honeybees may tend to disregard well-meaning but unwise provision of water too near to hives."

We must let the bees teach us!
Francis O. Holmes
Henniker, NH

A Mixed Up Bee!

Dear Editor:

Some of your previous articles stating that honeybees only go to one type of flower in a single flight is untrue. Because when my grandfather and I were sitting on the front steps observing his honeybees, we saw a bee go from a dandelion where it had been collecting pollen straight to a sunflower where it stayed for three minutes collecting more pollen.

Colleen Daly
St. Paul, MN

News and Events

GEORGIA
Georgia Beekeepers' Association

The annual meeting of the Georgia Beekeepers' Association will be held Oct. 2 and 3, at the Lowndes County Civic Center (Extension Service Building) in Valdosta, Ga. Feature speaker for the meeting will be Dr. William T. Wilson, research leader, USDA Bee Diseases-Pesticides Lab, Laramie, Wy., who will report on the Mexican beekeeping industry, honeybee diseases, and prevention of pesticide damage. Other speakers include personnel from the Universities of Florida and Georgia.

The meeting will begin at 6 p.m. Friday with registration, followed by a Dutch treat barbeque (or fish) supper, a smoker lighting contest, and a talk by Dr. Wilson. Registration continues at 7:30 a.m. Saturday, with more talks, a business session, and a honey identification contest.

More information on the meeting may be obtained from Cecil Sheppard, secretary, 3204 Westmart Lane, Doraville, GA 30340, Ph. 404-491-3734.

IOWA

Twenty-five exhibitors were involved in the beekeeping competition at the Iowa State Fair this year. A first-year beekeeper, Phil Metcalf of Leon, Iowa won the top award for a frame of extracting honey.

Sixty-five members of the Iowa Honey Producers Association assisted in rotation at the sales booth; and State Apiarist Glen Stanley talked informally about pollination and honey production.

ILLINOIS
Cook-DuPage Beekeepers' Association

The Cook-DuPage Beekeepers' Association Annual Banquet will be held Saturday, Oct. 17, 1981, at the Hillside Holiday Inn. Dinner will be served at 6 p.m.

The featured speaker will be Dr. Richard Taylor, author and Master Beekeeper from Trumansburg, New York, who will speak on the "Joys of Beekeeping". Also appearing will be the 1981 American Honey Queen, Kimberly K. Ganey, who will be in the Chicago area promoting honey and beekeeping. Tickets are $10.95, and must be purchased by Oct. 10th, 1981. For reservations or further information, contact Maxine Mills, Rt. 2, Joliet Rd., Lemont, IL 60439, (312) 739-1922; or Keith Meiser, (312) 968-3031.

ILLINOIS
Our 90th Anniversary

The Illinois State Beekeepers' Association will be celebrating their 90th anniversary during the annual fall meeting to be held in historic (Abe Lincoln Country) Springfield, IL, on Saturday, November 14, and Sunday, November 15, at the State House Inn starting at 9 a.m. Special rooms are available for beekeepers. An informative meeting for beekeepers and a ladies auxiliary meeting are scheduled. Some of the guest speakers are: Dr. Basil Furgala, University of Minnesota, and John Vaenoski, a commercial beekeeper from Wisconsin. There will also be a honey cookery contest for men (and women) featuring cakes and cookies. Prizes will be awarded. A banquet will be held on Saturday evening. Business meeting and committee reports will be held on Sunday morning. For more information contact: Mr. Hoyt Taylor, Sec., Illinois State Beekeepers Association, Pleasant Plains, IL 62677.
62677.

FLORIDA
Florida Beekeepers' Association

Florida State Beekeepers' Association Annual Convention will be held November 5, 6 and 7 at the Catalina Inn, I-4 and 33rd Street, Orlando, Florida

(Continued on page 572)

State Apiarist Glen Stanley* talked with groups around the Iowa Honey Producers Association displays at the State Fair. *In background facing camera.

News and Events

(Continued from page 571)

WISCONSIN
Wisconsin Honey Producers Association

Top speakers in the beekeeping industry, plus a bee school for beginners, will highlight the agenda for the annual convention of the Wisconsin Honey Producers Association. The confab is set for Nov. 5-7 at the Holiday Inn in La Crosse, Wis.

The event gets underway Thursday evening with a Board of Managers meeting.

Two University of Minnesota speakers are scheduled for the Friday morning session. Basil Furgala will talk on the horizontal two-queen system and Mark Sugden will give a commercial honeybee stock evaluation. Eric Erickson, USDA Bee Lab in Madison, is also scheduled for the Friday morning program.

Emmett Harp, also of the USDA Bee Lab at Madison, will lead the afternoon session with a talk on bee breeding and queen rearing. Other speakers will discuss promotion, pesticides and honey market reports. Entertainment and the annual queen's reception conclude the Friday night program.

The annual WHPA business meeting will run from 9 a.m. until noon on Saturday. A simultaneous workshop for beginning beekeepers will feature Harp, Erickson and Bill Bernacchi, Houston, Minn. The afternoon session will include the annual auction of honey from the honey show plus a presentation on harvesting pollen by Royden Brown of the C.C. Pollen Company, Scottsdale, Arizona.

The coronation of the 1981 Wisconsin Honey Queen and annual banquet will conclude the convention Saturday evening.

All beekeepers are invited to participate in the annual WHPA convention in La Crosse.

ALBERTA, CANADA
Alberta Beekeepers' Association

The Alberta Beekeepers' Association will meet November 4, 5 and 6 at the Marlborough Inn, 1316 33rd N.E., Calgary. The telephone number of the Inn is 403-248-8888. For additional information contact Louise Kinley, Sec.-Tres., Box 8454 Station F, Edmonton, T6H 5H3. Telephone: 403-438-0976.

American Honey Priness Glennda Musgrave, Bangersville, Ind., discussed national efforts in honey promotion when she spoke to the annual summer meeting of the Wisconsin Honey Producers Association in Watertown in July. Musgrave is shown with Wisconsin Honey Queen Laurie Sjostrom and state and national Honey Queen Program coordinator JoAnne Weber.

NEBRASKA
Barrett Named Head of Sioux Bee

The Sioux Honey Association has announced the retirement of President and General Manager Robert J. Steele, who has served the Association for 42 years. The Association also announced that DeWayne L. "Buzz" Barrett has been promoted from Assistant General Manager to President and General Manager.

The Sioux Honey Association, based in Sioux City, Iowa, is the world's largest honey-marketing organization.

Mr. Barrett has served in nearly every capacity as he worked his way to the top position of the Association. For the past 14 years, he has worked at the side of Mr. Steele as Assistant General Manager and Assistant Secretary-Treasurer, and since September, 1980, as Executive Vice President.

NEW HAMPSHIRE
New Hampshire Beekeepers' Association

The next meeting of the New Hampshire Beekeepers will be held on October 10, 1981 starting at 10:00 a.m. at the Grange Hall, Webster, NH on Route 127.

J. Kalvin Jones from the Division of Markets and Standards Grading and Dr. Boyle from the Agricultural Experiment Station will give lectures.

We will hold a state honey show using the program from the Rochester fair (Seacost Beekeepers) as a guide. Entries will consist of pound jars, comb honey, beeswax, and gadgetry. Four ribbons, 1st, 2nd, 3rd, 4th, and a Grand Champion, will be awarded.

Dinners will be provided by the Grange for a small fee.

After dinner, Mr. Weiss from Wilton, Connecticut, author of the book *The Queen and I* will speak.

A class will be held at a charge of $5.00 per person. Mr. Weiss will give a narration on basic beekeeping. There will be a class on pollen collecting, using various methods, with a discussion on pollen grains to determine which plants are contributing nectar and how this information can assist the beekeeper.

(Continued on page 573)

News and Events

(Continued from page 572)

Dr. Jaycox Changes Location

Dr. Elbert R. Jaycox, formerly Professor of Apiculture at the University of Illinois at Urbana, Illinois, moved to Las Cruces, New Mexico in September. After 18 years in Illinois, Dr. Jaycox decided to return to the Western United States where he has spent most of his life. He is Adjunct Professor in the Entomology and Plant Pathology Department at New Mexico State University where he will teach beekeeping and continue his research on honeybees. Dr. Jaycox plans also to continue writing extensively on beekeeping subjects and will be available as a consultant on beekeeping and pollination. He can handle assignments in Spanish and German as well as in English.

Dr. Jaycox is the author of *Beekeeping in the Midwest* and has edited the newsletter *Bees & Honey* since 1975. His research has included the behavior of honeybees, the pollination of fruits, vegetables, and soybeans, the diseases of honeybees, and bee management.

MARYLAND
Maryland State Beekeepers' Association

The Maryland State Beekeepers' Association will hold its annual Honey Show at the November 14, 1981, meeting. Details of the show and meeting place can be obtained from: Ann W. Harman, Vice President MSBA, 6511 Griffith Road, Laytonsville, MD 20879.

MARYLAND
North American Apiotherapy Society

The fourth annual symposium of the North American Apiotherapy Society will be held November 7, 1981, at the Holiday Inn, Baltimore-Washington International Airport, 890 Elkridge Landing Road, Linthicum, MD 21090 from 8:30 a.m. until 4:30 p.m. Those interested in attending can obtain a registration form from: Ann W. Harman, Information Officer, 6511 Griffith Road, Laytonsville, MD 20879, 301-253-5313.

(Continued on page 574)

News and Events

(Continued from page 573)

NEW JERSEY
Morris County Beekeepers' Association

Shown are members at the 40th Anniversary of the Morris County Beekeepers' Association held on June 7th at the Fairmount Presbyterian Community Center, Fairmount, New Jersey.

Seventy-five people attended the celebration and listened as Howard F. Lonsdale spoke on collecting and hiving a swarm.

Some members of the Morris County Beekeepers' Association.

ILLINOIS
Illinois Honey Week

The Illinois State Beekeepers' Association had Governor Jim Thompson sign a proclamation designating the week of October 11-17 as Illinois Honey Week.

This is one way we try to promote honey each fall just after the harvest. Local associations receive flyers and bumper stickers for distribution to their members. The State Association provides these without charge. This yearly promotion is very successful and has been going on for several years.

INDIANA
Indiana Beekeepers' Association

The fall meeting of the Indiana Beekeepers' Association will be held Saturday, October 24, 1981 at the Holiday Inn Northwest, 6330 Debonair Lane, Indianapolis, Indiana 46224, (Telephone 317-293-3220).

Registration will begin at 8:30 a.m. and the program will conclude at 4:00 p.m. with the awarding of door prizes. Lawrence Goltz, Editor of *Gleanings In Bee Culture*, will be the guest speaker.

WASHINGTON
Washington State Beekeepers' Association

The annual meeting of the Washington State Beekeepers' Association will be held November 12, 13, and 14 at Everett's Holiday Inn, Exit 128 off I-5. The Northwest District and the Stanwood/Camano Island Association will host the meeting with something interesting for everyone involved. There will be a variety of topics discussed.

There will also be a honey show. A banquet will be held Friday night with a guest speaker. There will be election of officers after the business meeting on Saturday. The theme for this year is "WASHINGTON APICULTURISTS LOOK TO THE FUTURE".

For more information contact: The Host Committee, P.O. Box 1205, Stanwood, WA 98292.

TEXAS
Texas Beekeepers' Association

The annual meeting of the Texas Beekeepers' Association will be Friday and Saturday, November 6th and 7th at the Holiday Inn Civic Center in McAllen, Texas. The meeting will begin with a reception in the anteroom of the motel on Thursday, November 5th, from 6 to 9 p.m.

The featured speakers will be Dr. Dewey Caron the new chairman of the Department of Entomology and Applied Ecology at the University of Delaware, and Dr. Orley Taylor, Professor of Entomology, Systematics and Ecology at the University of Kansas.

Dr. Caron's featured topics will be: Queen replacement in honeybee colonies; non-traditional beekeeping practices; what's new in crop pollination; and, honeybee pests and enemies.

Dr. Taylor will review research concerning the African bee and its potential impact on beekeeping in Texas.

Research findings in crop pollination will be discussed as well as the acarine mite problem.

An E.P.A. representative will discuss the use and possible restricted future of EDB.

A hobbyist school will be held in conjunction with the meeting on Saturday morning, November 7th.

The business meeting will be conducted on Saturday afternoon.

The Texas Beekeepers' Association welcomes everyone interested in beekeeping. A registration fee will be charged.

For motel reservations call 512-686-2471.

(Continued on page 575)

News and Events

(Continued from page 574)

CONNECTICUT
Connecticut Beekeepers' Association

The fall meeting of the Connecticut Beekeepers' Association will be held on Saturday, October 24, 1981 in the Donald F. Jones Auditorium at the Connecticut Agricultural Station, 123 Huntington St., New Haven, at 10 a.m.

Mr. John Borisewich will speak on "Honey Plants Along the Highways and By-ways of Connecticut."

The business meeting will concern itself with the financial problem of the Association, the raising of the Association dues and the composition and publication of the *HONEYBEE*.

The noon break will feature the ever-popular potluck luncheon. Bring something you like for the buffet table. We will furnish the coffee.

All beekeepers and friends are cordially welcomed to attend. The meeting usually adjourns between two and three o'clock.

CALIFORNIA
California State Beekeepers' Association

The California State Beekeepers' Association will hold its 92nd Annual Convention, November 16-19, 1981, at Harrah's Resort Hotel and Convention Center on the beautiful South Shore of Lake Tahoe.

The festivities begin on Monday evening the 16th with the annual Honey Queen Reception, followed by three days of informative presentations by some of the foremost experts in beekeeping and related industries. The climax of the convention will be the annual Queen Coronation Banquet and Ball on Thursday evening, the 19th.

For further information contact Frank K. Johnson, Secretary, California State Beekeepers' Association, 2114 Westminster Drive. Riverside, California 92506.

Ilyia Likita of Bambur, Nigeria, and Joan Mitchel, a Peace Corps beekeeper of Tegucigalpa, Honduras, with Beth Stephen. She, and the Worthington, Ohio United Methodist Church, provided scholarships that permitted these two persons to attend the IAAD-ATI Seminar on Development Apiculture.

Scholarship Fund Started

Due to the large number of requests for scholarships to the recent IAAD-ATI Seminar on development apiculture that could not be granted, the board of directors of IAAD has established a W. A. Stephen Memorial Scholarship Fund for Development Apiculture. Contributions are being solicited for this purpose and may be forwarded to Dr. Roger Hoopingarner, Department of Entomology, Michigan State University, East Lansing, Michigan, 48824. Checks should be made out to IAAD and marked W. A. Stephen Memorial Fund. Each year, after consultation, Beth Stephen will select the final recipients of these scholarship awards.

Monthly Honey Report

(Continued from page 563)

repeated rains and cool nights have extended blooming period of fall flowers and stimulated bees to gather nectar in Montana. Excellent production reported in some areas of Montana but decreased harvest in other areas. The overall state average in Montana should be better than last year. Honey is of good quality, light in color and of good body.

Region 9

Weather has been cool and damp during the early season in Washington but better conditions have improved the crop reports in July and August. Below temperatures in Oregon has led to a below normal honey crop. The seed crop alfalfa honey flow was down from last year, but the cotton honey crop was good in the Central Valley of California. The buckwheat honey flow in Southern California was very poor. Colonies are in generally good condition. Fall blooming flowers may be suffering from low soil moisture. Bulk honey trading was slow; retail prices up in July.

Overall, 1981, has been a better crop year than last year. Honey has been moving in the stores, and packers are beginning to buy, but not at support prices. A good honey flow in East Central Oklahoma but the Southeast did not get much honey. South Central Oklahoma got best crop in years, Central was average. Local honey selling well at higher prices. Recent rains in Texas makes a fall crop of honey a very good possibility. Cotton honey crop was above average. Honey sales steady.

Region 8

Extracting is well under way in Colorado in early September. Late summer showers have kept flowers in bloom for a longer than usual period. Consumer demand for honey is strong but so far the supply is meeting the demand. Retail prices have advanced in many areas due to overall cost increases. Intense heat,

Missouri Bees Not African

CONSIDERABLE NATIONAL publicity was recently given to the death of a woman in Cainsville, Missouri reported to be the result of an attack by a considerable number of honeybees. *Gleanings* asked Jim Robbins, president of the Missouri State Beekeepers Association to report on some of the details of the incident.

The attack began when a mower struck one of several bee hives in an apiary. The victim was sitting in a pickup truck nearby, about 25 yards from the disturbed colony. Several bees flew into the open pickup truck. In attempting to flee the truck and the area she fled down the road about 300 yards. She was reportedly slapping at the bees, an action which unfortunately drew more attackers from the disturbed hives. The husband attempted to rescue his wife and was also stung, but apparently not as seriously.

The victim apparently panicked at sight of the first few bees in the truck and left the protection of the cab to flee down the road. It is believed that she had health problems that may have contributed to the effects of the many stings she eventually received.

A sample of the bees, which were of a dark color and of feral origin was checked for traits which may have identified them as having a linkage to the African/Brazilian hybrids. No trace of such a linkage was found.

BUY & SELL

Classified rates, 41¢ per counted word, each insertion, payable in cash in advance. Each initial, each word in names and address, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) count as one word. Not less than 10 words accepted. Copy should be in by the 5th of the month, preceding publication. Send classified ads to : The A. I. Root Co., Advertising Department, Gleanings in Bee Culture, 623 W. Liberty St., P.O. Box 706, Medina, Ohio 44258.

MAGAZINES

THE AMERICAN BEEKEEPING FEDERATION needs your support; participate in national affairs; receive six issues of the NEWS LETTER per year. The ABF, Inc., 13637 N.W. 39th Avenue, Gainesville, FL 32601.

Interested in ANGORA GOATS? Read the SHEEP and GOAT RAISER, Box 1840, San Angelo, Texas 76901. The only ranch magazine published serving the Angora Goat Industry. Subscription $5. Samply copy 25¢.

THE SCOTTISH BEEKEEPER — Magazine of The Scottish Beekeepers' Association, International in appeal, Scottish in character. Membership terms from R. G. Brown, Publicity Convenor, Richmond Villa, Richmond Avenue, Dumfries, Scotland. Sample copy sent Price 20 pence or equivalent.

THE INTERNATIONAL BEE RESEARCH ASSOCIATION regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Mail inquiries from USA: H. Kolb, P.O. Box 183,, 737 West Main, Edmond, OK 73034, Phone: (405) 314-0984. IBRA PUBLISHES: **Bee World,** a quarterly journal for the progressive beekeeper. **Apicultural Abstracts,** a survey of scientific literature from all languages. **Journal of Apiculture Research,** for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership $1. Specimen copy of **Bee World** $1.50; **Journal of Apicultural Research** $1.50; **Apicultural Abstracts** $2.00, from INTERNATIONAL BEE RESEARCH ASSOCIATION, Hill House, Gerrards Cross, Bucks. SL9 ONR, England.

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.

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.

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.

BEE CRAFT — Official (monthly) magazine of the British Beekeepers Association. Contains interesting and informative articles. Annual Subscription (Sterling cheque 2.22 p.or U.S. $6.) Post paid. The Secretary, 15 West Way, Copthorne Bank, Crawley, Sussex, RH10 3DS.

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).

SEEDS

SEEDS OF HONEY PLANTS — Catalog on request. Pellett Gardens, Atlantic, Iowa 50022.

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.

EMBLEMS CUSTOM EMBROIDERED: for club or business. Minimum ten. Write: TLM28, 1929 East 52nd, Indianapolis, 46205.

HONEY STRAINER, fine mesh fabric bag, approx. 18" x 20", Instructions, Practical, Convenient, reusable. Ppd. $3.00 each, 2 up $2.50 each, Beckman G12, Box 633, Stuart, FL 33495.

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

BEESWAX

BEESWAX WANTED — Highest prices paid in cash or trade for bee supplies. The A.I. Root Co., Medina, OH 44256; Council Bluffs, IA 51501; San Antonio, TX 78204. Box 9153.

BEESWAX WANTED — Small lots to truck loads. Write or call. **DONALD SCHMIDT,** 859 W. 9th Street, Winner, SD 57580. PH: 605-842-0350.

HONEY FOR SALE

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

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

HONEY IN 60's FOR SALE. Bedford Food Products Co., 209 Hewes St.,

Brooklyn, New York 11211. Telephone: 212-EV4-5165.

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

PREMIUM MICHIGAN CLOVER and Blueberry Honey, $.57.5/lb. FOB drums exchanged. Call (616) 471-5038.

HONEY WANTED

BEEKEEPERS TAKE NOTICE — We cannot guarantee honey buyers' 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.

WANTED — HONEY, all grades. Send samples and price. M. R. Cary Corp., Box 122, Syracuse, N. Y. 13208.

HONEY WANTED—Any quantity in cans or drums. Walker & Sons Apiaries, Box 415, Milford, Mich. 48042. Phone: 313-684-2935.

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

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

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

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

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

IF YOUR honey is better, I'll pay you more. U.S. or Foreign. Cans, drums. Sample: Allan Hardman, Kawana Honey Company, 2100 Kawana Springs Road, Santa Rosa, CA 95404. (707) 528-4377.

HONEY WANTED: All varieties, any quantity, also comb honey. Office 612 464-4633. Residence 612-633-8371 — 612-457-2409. Nature's Treat, 6764 W. Bdwy., Forest Lake, MN 55025.

OHIO CLOVER HONEY — Barrels or Cans. Bruce Bollinger; Republic, Ohio; Phone; 419-426-7207.

Wanted Honey for our midwest honey routes — Weldon Bee Farms, Rt. 5, Warrensburg, MO 64093. Phone 816-747-3683 after 8 p.m.

ROYAL JELLY

SUPER STRENGTH Royal Jelly capsules, 100 milligrams per bottle of 100, $12.50; five bottles, $60. Prairie View Honey, 12303 12th St., Detroit, MI 48206.

PURE FRESH Royal Jelly, 2 oz. bottle, $19 pp.; 1 lb. $120. Prairie View Honey, 12303 12th St., Detroit, MI 48206

PROPOLIS

PROPOLIS U.S.A., ROUTE 8, HAYWARD, WISC. is again buying hive scrapings and propolis that has had the wax floated off in cold water. Please send a 5 to 10 pound sample if you live south of Illinois border or in treeless plains states. Paying $2.00 to $3.00 for scrapings and $5.00 to $10.00 for concentrated propolis. We also pay shipping costs. NO C.O.D.s except barrels or large shipments by truck freight.

CLEAN PROPOLIS REQUIRED (after wax has been floated off) $25.00 per kg. Payment guarranteed by return mail on arrival of Propolis to: Comvita Laboratories Ltd., P.O. Box 225, Te Puke, NEW ZEALAND.

WANTED

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

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

POLLEN

FRESH, PURE, Bee Pollen available in 1 pound containersat $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.

POSITION WANTED

Have experience and AAS from ATI in Beekeeping, need year around opportunity leading to management/future. Available January 1982 with extensive abilities for locations in US. Impeccable credentials and resume available on request. FRANK MANNIX, ATI, Route 250, Wooster, Ohio 44691.

BOOKS

NEW AND OLD Bee Books For Sale: Scout Bottom Farm, Mytholmroyd, Halifax, England.

NEW BEE BOOKS. Send for list. Linden Books, Interlaken, N.Y. 14847

FIFTY YEARS of *Gleanings In Bee Culture* journals. Charles Walters; 411 Conner Dr.; Fremont, Ohio 43420. Phone: 419-334-3683.

FIFTY YEARS AMONG THE BEES, Dr. Miller's classic now reprinted. $7.95 softcover, $12.50 hardcover. $1.00 postage. New York residents add 6% tax. Molly Yes Press, RD 3, New Berlin, NY 13411.

"BEEKEEPING BASICS", Larry Connor's interactive home study program, $38. Eight Color Beekeeping Postcards, $5. Box 817, Cheshire, Connecticut, 06410-0817.

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.

NORTHERN CALIFORNIA ITALIAN QUEENS. April 1-May 15. 1-5 $6.00, 6-25 $5.50, 26-99 $5.25, 100 up $5.00. After May 15: 1-5 $5.50, 6-25 $5.00, 26-99 $4.75, 100 up $4.50. Ship air mail post paid and insured. Live delivery guaranteed. Bachman Apiaries, 1801 Calin Lane, Anderson, CA 96007. Phone 916-365-4029.

FOR SALE: 200 two story hives with bees, over 200 extra hive bodies, extra lids, bottoms, etc. Large truck with boom, 40 frame extractor, uncapper, liquidfier, cappings melter, large

storage tanks, plus much more. $35,000. 408-688-7140, 680 Wildwood Drive, Watsonville, California 95076.

THREE HUNDRED or less two story hives locations western NY, apple pollenation contracts. Norman Sharp, Fishers, NY 14453, Phone: 716-924-2747.

FOR SALE — 32 beehives — 1 frame 9-5/8 deep. Call Evenings 715-255-8777.

DUE TO MY HEALTH, I'm selling 10-100 double brood hives, $75.00 each. Leonard Will, 101 Schultz Road, Elma, NY 14059, 716-652-4796.

FOR SALE — 150 hives of Bees — Frank Brodock, 14570 Lincoln Road, Chesaning, Mich. 48616, Phone: 517-845-3346.

TWO HUNDRED PLUS hives with hundreds of supers and complete extracting set up suitable for 1000 plus hives, with 2-ton truck and possible pollination contracts — $20,000. Reason for selling — other business expanding too fast. John Thomas , Farmington Falls, Me 04940, 207-778-6765.

ONE HUNDRED COMPLETE hives — 1981 Queens — Newer equipment — Discount to single buyer. Paul Anderson, Rt. #4, Box 96, Northfield, MN 55057, Phone 507-645-8477.

NORTH CALIFORNIA, nearly new equipment 100 or more. Heavy established hives $70.00 each, established hives $55.00 each, brood chambers, drawn comb $23.00, brood chambers with foundation $20.00, brood chambers no foundation $15.00, supers with foundation $12.00, supers no foundation $9.00. Cash inquiries only. Phone (415) 284-2741.

TWO HUNDRED plus colonies on Western Colorado locations. 303-625-3798.

ONE HUNDRED full 10 frame colonies of bees $40.00 — $50.00. Heavy with honey. State inspected with 3 stainless storage tanks. Phone 904-245-2461. L.M. Hubbard, Belleview, FL 32620.

FIVE HUNDRED single story hives, 1981 queen excellent condition. $40.00 each. Call after 7:00 p.m. W.L. Tate, Rt 2, Millry, AL 36558, Phone: 205-846-2661.

FOR SALE 50 hives of bees. Kevin Vinoke, Chesaning, Michigan 48616, Phone: 517-845-36-89.

FORTY NINE hives — 2-story; 111 Super with drawn comb; 28 frame supers; 612 motorized honey extractor; Kelley Wax Melter with sepator; capping basket; 50 mouse guards; 75 lbs. foundation; 6 hive top feeders; 55 gallon pails; 45 winter tops; 150 grams K.D.; 50 feeders with 2-quart jars; 2 fence chargers and miss items. Reason for selling is health. first $4400 goes! Ed Winnie, 4905 Lyncott, Lansing, MI 48910, Phone 517-882-7800.

FOR SALE: 200 two story hives with bees, over 200 extra hive bodies, extra lids, bottoms, etc. Large truck with boom, 40 frame extractor, uncapper, liquidfier, cappings melter, large storage tanks, plus much more. $35,000 408-608-7140, 680 Wildwood Drive, Watsonville, California 95076.

FOUR HUNDRED TWENTY-FIVE two-story colonies, 8-frame with 1981 queens and one super each — 165.00. Also supers, feeders, lids, bottoms, etc. No junk. One or All. Phone: (503) 363-8913.

FOR SALE: 1300 colonies, supers, excellent equipment. Wisconsin and Florida locations. Will divide. Bogenschutz Uncapper, dovetail saw, 100 comb supers. Phone: 608-924-3255.

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.

FOR TOP QUALITY BEE SUPPLIES and 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 44256.

BEE EQUIPMENT manufacturers-Oregon pine woodenware, super ends rabbet-joint and beekeeping supplies, smokers, excluders, etc. Write or Call for commercial prices:MONCRIEF BEE SUPPLIES, Post Office Box 625, 1105 Lakewood,Lakeland, FL 33802. (813) 858-6754.

WAXMASTER CAPPING SEPARATOR...melts cappings fast with temperature controlled, circulated hot water, electrically heated. Pack fine quality honey with the PACKING HONEY BOTTLING SYSTEM. All equipment stainless. Free brochure. HONEY SALES COMPANY, Mfrs., 2817 No. 2nd Street, MINNEAPOLIS, MINN. 55411.

WE CARRY A COMPLETE LINE OF BEE SUPPLIES and containers. Write for price list. E & T GROWERS. R. 1, Spencerville, Ind. 46788. (A suburb of Ft. Wayne). Phone 657-5136.

ALL WESTERN BEEKEEPERS: Lock-corner 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.

YOU'VE SEEN OUR CLASSIFIED ADS, NOW SEE OUR OBSERVATION HIVES, page 488 of this *Gleanings*. Kawana Honey, 2100 Kawana Springs Rd., Box G,Santa Rosa, CA 95404, Phone (707) 528-4377.

"CONICAL BEE ESCAPES AND TEMPERATURE CONTROLLED VENTILATORS is our specialty. For free information write to: Trafalgar B. Equipment, 3371 Trafalgar Road, RR 1, Oakville, Ontario, Canada L6J 4Z2."

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

PINE BEE SUPPLIES

*Beehives dovetailed — $3.50 each
*Super 5¾" or 6⅝" — $2.50 each
*Frames heavy duty per 100 — $28.80
*Frames heavy duty per 1000 — $250.00
*Lids or bottoms (migratory) — $1.75 each or $3.50 per set

Allow manufacturing time on large orders. Marvin Smith Apiaries, Rt. 1, Parma, Idaho 83660, Phone 208-722-5278 days.

BEESWAX, old combs and scrapings collecting? Process it easily and economically with the BEESWAX PROCESSOR. Write Shots Inc., 4418 Josephine Lane, Robbinsdale, MN 55422.

STRAUSER BEE SUPPLIES available in Ohio. Quality supplies at low prices. Send for catalog. Shreffler, 7734 Waynesburg Dr., Waynesburg, Ohio 44688.

RADIAL HONEY EXTRACTORS-5 frames, 6⅜ or 5½. Patented. Wholesale and retail sales. GAMBLE'S HONEY EXTRACTOR CO., P.O. Box 7997, Greensboro, NC 27407, Phone: (919) 299-3973, Day or Night.

EIFHTEEN-FRAME stainless extractor, 18 — 2-story hives and many extras. Ones sale only. Phone: 216-252-5124.

FOR SALE 75 complete cobana, supers, painted, with frames, foundation, ready for the hive. 218- 238-5594 or write. Rich Olson, Rt. 1, Lake Park, MN 56554.

FOR SALE: ONE FIFTY-FRAME EXTRACTOR. $200.00. Phone: 218-796-5794.

NEW-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 each pp., Blossomtime, P.O. Box 1015, Tempe, AZ. 85281.

THREE HUNDRED FOURTEEN 10 frame doubles with supers, 80 frame extractor, cowen uncapper, Kelly jumbo capping melter, many extras. Clarence Covert, Phone: 412-285-3512.

FOR SALE: HONEY CONTAINERS — 800 Cases 12/10 oz. #1717 Round Brockway $15.00 Gross — 990 Cases 12/40 oz. #A-29 FLT STD W/M (Quart) (Arkansas) $21.00 Gross — 288 Cases 6/60 oz. #9050 Round W/M $33.00 Gross. Phone or Write: Fair Oaks Apiaries, Route 1, Box 302, Wallace, NC 28466, AC919-285-4835.

EIGHT HUNDRED good single 10 frame hives, 2,000 deep 10 frame honey supers. All reasonably priced. The A.I. Root Company, Box GS, P.O. Box 706, Medina, Ohio 44258.

FOR SALE 36 frame RADIAL EXTRACTOR — Phone: 412-654-6521.

TWO HUNDRED FIFTY hives with equipment plus 50 frame extractor, 500 gal. holding tank and more. $75 a hive takes all. 713-592-4275.

TEXAS SIZE SAVINGS ON QUALITY OREGON WOODENWARE. Glorybee products are now available in Texas. Before placing your next order consider our quality products at the lowest prices in Texas. We are conviently located just off IH-35 north of Ausin. Price list available. Contact Praise The Lord Honey House, 1806 F Howard Lane, Round Rock, Texas 78664. (512) 251-3823 or (512) 836-1675.

FOR SALE

COMPLETE PACK KING BOTTLER — never been used. Also 2 each 500 gallon honey tanks — 3″ gates. Phone: (406) 388-4862.

FOR SALE: 1500 colony outfit in North Eastern Saskatchewan. Included is a 96 x 40 foot honey house and a 96 x 40 foot warehouse. A shop , a wintering building and house situated on a 3 acre plot. Only serious inquiries. Contact Richard Gane, Box 143, Aylsham, Sask., Phone: 306-862-9425.

HONEY PRODUCTION BUSINESS in Southeast Colorado, 250 colonies, equipment for 200 more. Prime locations on Arkansas River. Large Building, extracting equipment. Four state retail route. Phone: 303-456-0975.

COMPLETE HONEY operation. Five irrigated acres, hives buildings, extractors, and more. Century 21 Sun Basin, Evenings: (509) 787-2597.

FOR SALE: Bee and honey business in beautiful Santa Cruz County, Calfornia. Ten acres with spacious home & workers cottage. Barn and chicken house, plus 30x70 warehouse with all the extracting and bee equipment. All for $400,000. or will sell bee business for 35,000. 408-688-7140. 680 Wildwood Drive, Watsonville, California 95076.

THREE HUNDRED beehives — 1½-story — lots of supers and equipment, one ton Chevy truck with enclosed bed (1974), commerical cider mill — 36″ racks — commerical ice cream machine — Woodland Apiaries, RD 1, Box 34 B, Petersburg, PA 16669. Phone : 814-669-4761.

BEEKEEPING BUSINESS for sale. 1000 hives. Central Pennsylvania. Whole or in part. Includes pollination services, equipment and locations. Call evenings only. (215) 968-2921.

POLLEN PRODUCERS. Do you have a market for your pollen??? Before you build your own traps think about what you will do with your pollen. We sell quality traps and buy pollen. Before you buy someone elses traps or build your own call or write: Champie Pollen Co., 5118 N. 18th Ave., Phoenix, Arizona 85015, 602-277-0482.

Index to Display Advertisers

5 GALLON PLASTIC HONEY CONTAINER

Cat. No. R20

Queenline Economy

2½ lb.

GLASS JARS (Caps Included)

Queenline — Q12-½ pint; Q17—1 lb.; Q22—2 lb.; Q33—4 lb.
Economy — Q40—5 lb.; Q60—2½ lb. Square

ROUND COMB SECTION COVERS AND ROLL LABELS

F45A 200 pcs. (100 sections clear) — F45 400 pcs. (200 sections clear) — F46 Roll of 100 labels

HONEY GIFT CRATE

(comes unassembled) Cat. No. Q77

Over 100 years of quality and service.

Are you a commercial honey packer with a thousand colonies, or a comb honey producer with a few? Maybe you are experimenting with the round comb honey style this year? Do your customers want a gift for a friend, or honey for the table that won't spill when eager hands reach for it? No matter what you need Root has the container for you. We not only help you produce your honey. . . WE HELP YOU SELL IT!

Q75 Q70 Q73

PLASTIC SQUEEZE BOTTLES

PLASTIC CUT COMB BOXES

Q76 (1)
Q76A (100)

Send for FREE Label Samples.

SECTION WINDOW CARTON

T10 (100)
T11 (500)

The A.I. Root Company

1028 3rd St., Council Bluffs, Iowa 51502 — P.O. Box 706, Medina, Ohio 44258
P.O. Box 9153, 537 Flores St., San Antonio, Texas 78204
1700 Commerce Rd., Athens, Georgia 30607 — 1106 E Grand St., Elizabeth, New Jersey 07201
Send for a free catalog for the listing of your nearest Root Dealer.