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JUNE 1980

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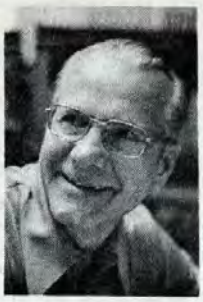

Lawrence Goltz

Gleanings in Bee Culture

June 1980 (ISSN 0017-114X) Vol. 108, No.6

Created to Help Beekeepers Succeed

107 Years Continuous Publication by the Same Organization

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COVER STORY

This photo by Richard Duncan of Augusta, Maine shows a bee entering the blossom of one of the cucurbits (squash, pumpkin, melon and cucumber). Pollen grains cling to the body hairs of the bees, a means of cross pollinating these crops. Pollination by bees and other insects is essential to high yields and good quality from these vine crops.

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Monthly HONEY Report

LAWRENCE GOLTZ

May 10, 1980

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

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	Reporting Regions 1	2	3	4	5	6	7	8	9
60 lbs.(per can) White		30.00	30.90	33.00		36.40	30.40	33.00	33.60
60 lbs. (per can) Amber		27.60	30.60	28.20		32.80	28.44	30.00	30.60
55 gal. drum (per lb.) White	.60	.50	.52	.53		.58	.51	.55	.56
55 gal. drum (per lb.) Amber		.46	.51	.51		.52	.49	.50	.56
1 lb. jar (case of 24)	25.00	22.40	22.90	20.50		22.00	22.18	18.40	25.50
2 lb. jar (case of 12)		21.15	20.20	19.50		21.00	21.14	17.10	22.50
5 lb. jar (case of 6)	29.00		23.25	21.75		23.50	22.55	22,25	24.50
Retail Honey Prices									
½ lb.	.85		.75			.75	.67	.74	.79
12 oz. Squeeze Bottle	1.25	1.09	1.15	.95		1.05	1.19	1.08	1.25
1 lb.	1.40	1.25	1.32	1.25		1.15	1.20	1.00	1.35
2 lb.		2.39	2.50			2.15	2.33	2.69	2.55
3 lb.			3.25	2.80		3.40	3.50	3.49	3.70
4 lb.		4.49				4.35	4.20	3.60	4.55
5 lb.	6.00		5.05			5.00	5.19	5.54	5.35
1 lb. Creamed	1.40		1.36				1.47	1.37	1.35
1 lb. Comb	2.00		2.00	1.75		1.65		1.49	1.90
Round Plastic Comb							1.60	1.35	
Beeswax (Light)		1.80	1.85			1.80	1.80	1.80	1.90
Beeswax (Dark)		1.70	1.80			1.75	1.75	1.70	1.85

Misc. Comments:

Region 1

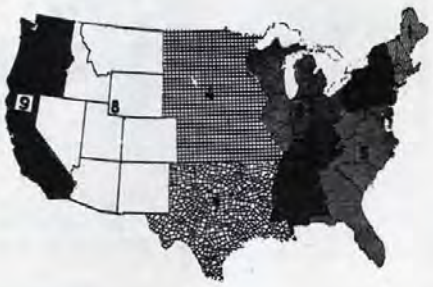
Honey sales have been down the last three months. Bees reported in good condition in Vermont and Connecticut. Moisture conditions good in southern part of region, but dry in the north. Honey stocks are good.

Region 2

Six to eight percent winter loss counting queenless colonies. Bees in better than average condition. Swarming may be a problem. Honey sales only fair. Price competition in large retail stores between some major brands of honey. Honey packers reluctant to invest heavily in bulk purchases.

Region 3

Bees building up fast in May. Packages installed and colonies being split to replace winter losses which were light. Weather warm and dry during early May, during fruit bloom. Honey sales in Indiana improving with warmer weather. Indiana winter losses less than 5%. Rainfall is about 2" below normal at the end of April.



Region 4

Colonies wintered well with large populations but required considerable early feeding. Had to use snowmobiles in Minnesota in some instances to transport feed to outyards due to late snowfall during early April. Had a record heat wave for five days in late April. Weather is dry during early May, winter losses light in Minnesota. Honey sales are good. Weather highly variable in Winsconsin in late April, bees wintered well. Honey plants developing well in Iowa. Honey sales holding up well in Nebraska.

Region 6

April has continued the cool trend established in March. A several day period of warm weather during the third week of April allowed bees in Kentucky to gather nectar from the early sources. Tulip poplar is promising and will bloom the last half of May. Honey market has slowed.

Region 7

Very dry with little rain in west and south of Texas through May 1st. East Texas tallow trees appear promising for a honeyflow. Honey sales steady, supplies very low. Cold and windy during the spring in Oklahoma; too cold for the flowers to produce much nectar. Lots of pesticide loss in Oklahoma from spraying by aircraft. Arkansas very cool, bees have been set back 15 to 20 days. April had both hot

(Continued on page 355)

SMALL BEEKEEPERS

. . . we can hold down your costs, too!

This will be more like a personal letter than an advertisement because we are right smack in the middle of our busiest season! We're down in Texas/Oklahoma right now* looking after our own colonies, and meanwhile seeing to truckload after truckload of our PVH Naturel™ Round Comb equipment and woodenware and supplies for the thousands of you who have called or sent in your orders. Gosh, but it's good to be able to help so many of you with your needs! We've worked past midnight often and, when one is tired, don't always check things out as thoroughly as usual. That's the only thing worrying us. Did anyone receive unsatisfactory service or supplies? PLEASE . . . we **really** mean it . . . if you have any questions about anything, pick up your phone and call us—TOLL FREE. As you'll read in our catalog, we make no Warranties . . . with all of today's silly limitations and gobbledygook. What we do instead is describe the merchandise truthfully and use it ourselves and price it fairly. (If you haven't one of our 1980 Catalogs, write or call for one today.) Then . . . if ever **any** question arises . . . you can call us on our WATS line and we'll get you fixed up and become longtime friends. Because we've seldom found a real beekeeper who was out to take advantage of us and isn't **that** a happy thought these days! Forgive the long dissertation. Now for some suggestions to illustrate how reasonably good equipment can be if you're on a fixed income or limited budget or only want to go into small production . . .

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Since few who keep only a single colony will be reading this, we can assume you already know the very lowest cost way to collect and package honey is in the comb — our Papio Valley Naturel™ Round Comb system, for instance—and that you prefer to bottle it to use or sell as honey that fairly sparkles with clarity and purity. CALL US! Among others, we handle the carefully built MAXANT stainless steel honey processing equipment and we use it ourselves. But this is one area of beekeeping where catalog buying or dumb clerks can **hurt** you! Either ask and get models and sizes and kinds from a good beekeeping friend whose judgment you trust . . . or, CALL US! We'll help you select good equipment at sensible cost to suit **your** particular needs. From uncapping to extracting; clarifying; pumping; filtering; settling; to final heating, we'll give you the facts you need to do the job right and reasonably. Whether a hand operation or huge tanks and motors and heaters and heavy equipment, we can supply you. To find out about settling times or bottling temperatures or compare equipment and supplies, CALL US —TODAY! It normally takes 6-8 weeks to supply honey processing equipment. No one, when it comes to these beekeepers' items, has a big warehouse somewhere, with floor after floor of stock in storage. And that means harvest time will creep up on us. SO ORDER NOW!

LOW COST EXTRACTOR $189

These small extractors have STAINLESS STEEL tanks and covers and their fixed screen reels are supported on ball bearings. They have tough Nylon honey gates. Sturdy enough for a lifetime of service, but you'll find nothing fancy or frivolous about them. Hand cranked, of course, at this price.

UNCAPPER-MELTER-SEPARATOR $265

ALL-IN-ONE unit eliminates the use of a **separate** melter! Has double jacket bottom with thermostatically controlled water temperature. It melts the beeswax allowing it and warm honey to flow at end of tank where separation takes place. Two outlets . . . honey comes from one . . . melted wax from the other. Stainless steel. Welded steel stand costs $25 more, but you could build your own if you're on a budget.

BOTTLING TANK $279

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JUST A BIT OF BRAGGING . . .

We wouldn't expect anyone to take all the time and trouble to look, but our last year's ads GUARANTEE to buy back the **filled** Naturel™ round combs at the entire price paid for our special offer on PVH Naturel™ frames and super and all. It was our way of letting folks know **we** know beekeeping and offer our plastic ware worth the money. Also, to help them discover how popular Naturel™ Round Comb honey is with friends and honey lovers.

WELL! We sold thousands of supers and Naturel™ Round Comb equipment and guess how many beekeepers wanted their money back? NOT ONE! Forgive our bragging, but beekeepers are mostly down-to-earth, practical, folk and **we think** that's a recommendation we can be proud of. Everybody came out winners!

HONEY, WAX & POLLEN NEEDED!

Again this coming fall, we'll be needing honey and beeswax and pollen. Be sure you let us know what you have to sell and give us your name, address and phone for our files. We **ran short,** this last year, and possibly **your** production could have helped us out and we'd both have benefited.

NOW FOR THE GOOD NEWS!

Glance at your back issues of this magazine. In the midst of rising prices and ripoffs, we're going to honor your orders at the 1980 advertised prices, for a while yet, anyway. The latest printing of our catalog, just coming off the presses, required a number of price increases and whether or not you'll need to pay them depends upon whether or not your order is received before or after the items came in to us. But **any** of the **advertised** prices in this year's issues of this magazine will hold good as long as supplies last, or while we can still get the items under our current contracts with our suppliers and manufacturers. You might just look ahead at your **next** year's requirements and order now and save money!

POLLEN TRAPS $18 . . . 2 for $34

Excellent for anyone interested in collecting pollen which, according to some reports, is bringing as much as $8 to $10 a pound when properly packaged for retail sale. Even the worst case ought to return $2 a pound wholesale so beekeepers who are averaging 25 to 50 pounds per hive per year ought to recover 3 to 5 times the $18 cost. Pollen collection is pretty simple. These traps come completely assembled and only need to be painted to match your hives before setting out. They **replace** the bottom board under the hive. You simply set the hive **on** the pollen trap. Bees enter normally—but now, they pass through a double-screen system which causes up to 65-75% of their pollen to come off and drop down into a drawer (tray). It takes less than a minute to slide this tray open . . . from the **back** side of the hive . . . and recover your pollen. So **far** as we can discover, pollen collecting stimulates workers and increases honey production because more bees are out gathering more pollen for the brood. So . . . whether or not you're a Health Food believer, there's a cash crop of pollen in your hive you might want to harvest! Shipping weight . . . 18# each.

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I'm ashamed to say it, as a Beekeeper, but my mother collects SUGAR SHAKERS! When I was a kid, I used to buy her an antique glass sugar shaker every year for her birthday. Her birthday fell during strawberry season so I could usually buy a sugar shaker for 10 quarts of strawberries. The antique stores were full of them then. Now, on her birthday, I can't find one in an antique shop, and if I were to find one, I could not afford it anyway. Besides, Mom shouldn't be collecting sugar shakers in a house gone honey mad! So Mom — for you, and because honey pots are the antiques of the future —

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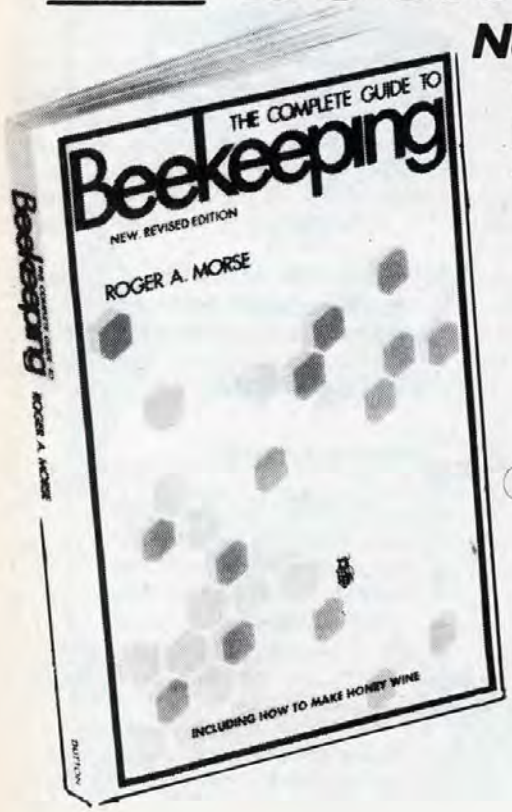

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Beekeeping In The Year 2000

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

THE OCCUPATION WILL be different then. Some of you will like the changes.

Federal control will be minimal. Federal laws will apply only to inter-state matters. State control, however, will be more rigid.

For example, each State will be districted into large areas — a county or more to a district — and one individual or firm will be licensed to dominate beekeeping in that area, privileges and responsibilites being assigned. All beekeepers will be required to have a license. Small operators will be rather restricted in the number of colonies they may maintain, and where they may maintain them. These restrictions will be based on the assuption that large scale operators can better serve the public, particularly in the field of pollination.

Franchised beekeepers for large areas will be required to maintain rather fixed numbers of colonies in each area in accordance with its pollination needs in general, and its nectar yielding capability.

State commissions made up half of beekeepers and half of consumers (of pollination services, honey, pollen, wax, propolis, venom), the latter group appointed by the governor, will administer State regulations. These State regulations will have been largely the work of the commissioners on the theory that they are closer to the people, and hopefully less dominated by political considerations than the members of the legislature.

By the year 2000 both the Congress and the State legislatures will have lost part of their present powers — at the insistence of the people. Losses of power will include permission to set their own salaries and privileges.

All honey offered for sale in the year 2000 must have been inspected and graded by State inspectors before being offered for sale. Only the more palatable honeys will be permitted to be sold for household use.

Imported honeys will likewise be closely inspected and graded and their uses specified.

Minimum and maximum pollination fees will be established for each State with freedom to all parties to negotiate prices between the two limits. Rental privileges to local area beekeepers will be guaranteed as minimal standards and prices are met.

Regulation regarding moving bees on the highways will be established to protect all concerned. Likewise, the locations of beeyards will be subject to State inspectors' approval.

Annual reports will be required of all commercial operators, asking for information, among other items, on the percentages of colonies failing to winter; average yield per colony; number of colonies rented for pollination. Beekeepers with below-average records will be invited to attend courses of instruction.

State regulations will restrict the use of insecticides that are injurious to bees, and damages to owners will be paid for losses; also, for depredations by bears on the basis of the fact that the State protects bears so that they may be available for hunting purposes.

Most beekeepers will follow the practice of requeening one half of their outfit each year. Skilled help will follow a prescribed routine for the remaining colonies of reversing, Demareeing, and reduction of number of frames of capped brood in a hive prior to the swarming season.

But requeening does not mean that beekeeping in the year 2000 will destroy queens in their second year, or third year, merely on the basis of their age. Among requeening devices will be the two-queen method, because by the year 2000 nearly all operators will realize that a queen that wintered well and is laying productively in the spring of her second year is too valuable an individual to lose. They will employ various methods of retaining her productiveness for 3-4 months.

One of these methods, as we have said, is the two-queen plan. Under this system skilled workmen will smoke the upper hive body to drive down the old queen. Then, using a lightweight lift, they will elevate most of the brood (particularly all of the brood in the upper hive body — probably the entire upper hive body) above an inner cover (which will serve as a bottom board) with a double screen over its center hole. An upper entrance will be provided, and a young queen given to head the unit.

Meanwhile, the old and very productive queen in the lower unit will no longer be part of a swarm-inducing congestion; she will be laying heavily to provide a working force that, when added to the numbers in the upper unit, will produce a crop nearly twice that in quantity of a single queen unit.

This procedure provides at least three benefits: It reduces congestion and hence lowers the tendency to swarm; it provides for requeening; and it increases the yield of the colony without materially increasing the amount of equipment used.

Queen breeders will be licensed. Unlicensed producers will not be permitted to sell their queens to others, but may use them themselves. Artificial insemination will increasingly be practiced in an effort to determine genetic inheritance. Approximately half of northern beekeepers will employ a queen breeder.

States such as Florida which currently experience large influxes of out-of-state operators will establish fixed locations, and quotas that will restrict the number of colonies that may be brought in from other states. Beekeepers from other states that wish to build up nuclei will be encouraged; those coming in to produce honey will be discouraged from entering except on a strict quota basis.

The production of comb honey will almost totally be confined to making cut comb honey and chunk honey, the theory being that a colony will produce more honey of this type, and with less likelihood of swarming. Also, the manufacture and introduction into use of transparent plastic containers for cut comb honey will have made it as attractive in the market as the more expensive section honey in wood frames or in the Cobana containers.

Reliable facts about the nutritional qualities of honey will be published widely so that the public will know what kind of product it is purchasing, and to what degree it is superior to other foods containing fewer minerals and vitamins.

The superior qualities of honey as an ingredient in breads and pastries will be reliably determined — with no extravagant or untrue claims being made.

Those who attempt to sell substitutes as

honey will be vigorously prosecuted by Federal or State authorities, or both.

The present trend toward more general use of shallower supers will cease in the 2000's except among amateurs. This will be because large scale operation in the bee business will have brought almost total mechanization. Nearly all colonies will be operated on pallets from which they will be removed only for extraction purposes. Workers will do almost no manual lifting except of individual frames for examination purposes. Combs will be extracted without being removed from the hive body.

Even an ideal mechanization will never totally eliminate the value of on-the-spot judgment of a skilled beekeeper. He will note the exceptional case. Using his expertise, he can add much to the over-all productiveness of an apiary of colonies. Of course, some commercial outfits will forego such benefits and depend for profits on a universally prescribed handling of all units, regardless of obvious need for special treatment here and there.

So there will be, generally speaking, two practices among large scale beekeepers of the 2000's: One will standardize all details of management. The second will make occasional variations when they seem desirable.

By the year 2000, Congress will probably have enacted a law restricting the weight that any laborer may be asked to lift, to 50 pounds. Beekeepers will accordingly have the choice of going one hundred percent into mechanization, or reducing the size of hive bodies. Likewise, the 100 pound bag will have seen its last day's use — except for owners.

The dimensions of the Langstroth hive will be altered slightly by the width of the hive body being reduced by approximately an inch. The exact measurement will have been preceded by extensive research. Automatic spacers for frames will be in general use.

Health standards in the production of honey will have been placed into effect; this will be particularly true of the honey house and its equipment and operation. Regulations in labeling honey products will likewise have been established in their major details, particularly as regards claims for the value of honey as a food and health item. Rigid regulations requiring labeling to reveal extent of filtering and heating and blending of all honeys offered for sale will have been established.

Federal laws governing the importation of bees, queens and honey products will have been made more stringent.

Large scale commercial operators will have been made responsible for eliminating wild honeybee nests as potential hosts of low level producing bees (queens and drones), and as harborers of disease. The quality of bees owned and operated by amateurs and beginners will be carefully scrutinized by state inspectors.

Scientific findings of the limits of the therapeutic value of pollen and royal jelly for human use will be widely publicized.

All bee equipment including individual frames will be required to be clearly labeled.

State law will mandate that all foundation of full depth dimensions be both vertically and horizontally wired. Brood combs containing more than 17% drone cells will be outlawed for use except in extracting supers.

Elementary and high school texts will contain accurate data on the economic value of the honeybee to human society by virtue of its pollination talents.

All people allergic to bee stings will be required by state law to secure treatment, and persons failing to secure such treatment will be precluded from entering claims for personal damages due to receiving unsolicited stings.

State departments of transportation will be required to include high standards of nectar yields as one characteristic of all plantings along state highways.

Wide circulation of accurate information about all characteristics of performance and behavior of honeybees will have been accomplished through school instruction and through the media to the degree that extravagant claims about the viciousness of these creatures will be too widely questioned to encourge showing of scare films.

Degrees of aggressiveness of honeybees maintained in rather populated districts will be governed by state authorities and checked by state inspectors.

Franchised operators for large areas in each state will be required to take courses in identification of diseases of bees; methods of management; law; bookkeeping; supervision of personnel; principles of purchasing and selling.

The use of the word honey in lables for any product offered for sale will be restricted to those which actually contain the item; and the percentage which honey is of the total content must be shown on the label.

If my assessment of conditions under which beekeepers will operate in the year 2000 is reasonably correct, it will be obvious that many operations will be regulated and prescribed by federal or state law. Over the millenia of past history that has been the tendency. In some European countries prior to the second World War it was necessary to set aside about a half day to secure a dog license.

Of course, not all of this is bad. Emerson once said that for everything you lose you gain something else. It remains to be seen (for those of us who make it into the 2000's) how far we Americans will yield to regulation.

Old Refrigerator Used To Liquefy Honey

M.L. Eastridge of Cleveland, Ohio uses an eight cubic foot refrigerator cabinet to liquefy bottled honey. He stacks it full of honey and puts a 60 watt bulb in the bottom for 24 hours. He does the same with chunk honey in jars except that he uses a 25-40 watt bulb. The method is cheap, there are no washed off labels and does a very good job.

Minnesota Offers Tests for Nosema

A LETTER to Minnesota beekeepers from Richard Hyser, Supervisor of the Apiary Inspection Service offers free Nosema testing to the State's beekeepers. The object of the testing is to determine the level of Nosema, a subject of study by Dr. Furgala and his associates at the University of Minnesota.

Beekeepers were asked to sample bees flying at the hive entrance during the time period of April 1st to June 1st.

The procedure is to collect 5 bees from one hive; repeat every second or third hive to make up a 50 bee sample. The collected bees are placed in 70% aqueous methanol or in rubbing alcohol. Containers must be tightly stoppered for mailing. A short report form, available from the Minnesota Dept. of Agr. must accompany each sample.

Nosema is a disease of honeybees difficult to detect visually.

Journal Of A Beekeeping Novice — Year 3

By MARCIA BONTA*
Tyrone, PA

MARCH 5, 1979 — Heavy fog and mist, the streams roaring with water and visibility near zero on our isolated Pennsylvania mountain top farm. But I went out early in the morning and put sugar syrup on the hives. It was a cold winter and the hives were very light. At 45 degrees with misty rain, I was sweating in my ski jacket and bee helmet. Each hive received eight pound syrup cans placed upside down over the hole in the inner cover. Then I built up over each with two empty supers before putting on the outer cover. I worked very quickly to avoid chilling the bees, but the bees in the middle hive came out for cleansing flights despite the weather. The bees were up at the top in all the hives which makes me suspect they are low in stores, but, at least they are all alive.

March 19 (60 degrees) — Instead of making pollen cakes this spring I am experimenting with dry pollen substitute. I have some in a shallow cardboard box on the covered back porch just below the bird feeder. The bees always come there in early spring to gather the dry seed chaff that looks like pollen to them. I have another box near the hives and only bring it in at night if rain threatens. However, we have had a long spell of good weather and the bees are gathering large amounts of the pollen substitute. They are really active and lively this spring — eager to get going!

April 10 — The lovely spring month of March went out, giving us a cold, blustery April, almost as if the two months had changed places. The syrup cans are empty and so I refilled them again as the bees stayed huddled in the hives.

May 2 — The bees are humming so loudly I can hear them on the veranda. During the few warm days in April, they were working the red maple blossoms. But the dandelions are very late as is everything else this cold, rainy spring. A day like today — warm and clear — has brought them out to pollinate the pear trees and work over the gill-over-the-ground which spreads itself everywhere.

May 31 — After a week of cold and rain, there has been a partial clearing, enough, at least, to allow the bees to fly and to pollinate the black raspberries and blackberries. After two years without them, I anxiously watch the weather and the bees when the bushes are in blossom.

June 4 — At last a clear, blue-skied day with a breeze and real warmth to dry the soggy soil. Even though we awoke to thick fog, I knew that once the mists receded we would have our first good weather in two weeks.

The bees are a buzzing mass of busyness, pollinating the blackberries, black raspberries and dewberries, all of which are in full blossom now. I have great hopes for berries because the weather is finally favorable.

July 8 — What a hard year for the bees (and us). Most of June was damp and cool. On July 4, it was 42 degrees and my squash just broke ground today, a full month behind schedule. Milkweed is just starting to open while elderberry is at its height. We supered the three hives since the bees seem very busy although I can't find them working anywhere in the old fields. I assume that the basswood is out down in the hollow. Whatever it is, the bees are filling up the hive with honey that perfumes the air.

July 14 — a spell of hot, humid weather so my son, Mark, and I waited until evening to pick the bumper crop of black raspberries. Suddenly he yelled from the other side of the patch. "Hey Mom! There's a big mess of bees on the ground and more hanging from the black walnut tree." The bees that had been hanging out of the third hive all week had swarmed.

Cautiously I approached the beeyard. Just beyond it, off the path to the left, I could hear a tremendous buzzing of bees. Hundreds more were flying to the spot. After much squinting I located the rest of the hive twenty-five feet above me hanging from a branch of the tree. But it looked as if the queen was on the ground because all the bees were flying in that direction. If the swarm stays there overnight we may have a new hive in our beeyard.

July 15 — Even before breakfast, my husband, Bruce, and I were out in the beeyard, assessing the possibilities. Evidently the swarm had been so heavy it had broken off the tree limb and dropped most of the bees and the queen to the ground. Luckily they were still there, hanging in three separate masses from the tree branch. Several thousand more bees clung to the surrounding weeds and branches.

After Bruce had set up another hive box on a new stand at right angles to our other hives, he decided to play hero. He did not put on his net or his gloves. Swarms, he reasoned, despite their intimidating sound and appearance, were reputed to be very easy to handle.

I, on the other hand, was not so confident. Moving off, I watched from a safe distance while Bruce slowly picked up the branch and eased it thirty feet over to the new hive box. The bees were too widely dispersed to shake into the box so I went running into the house for my flower pruning shears while Bruce stood patiently holding the heavy mass of bees.

They were so peaceful that I walked, in shorts and blouse, right up to Bruce with the shears. Carefully maneuvering the branch over the hive, he cut it in three places, dropping the pieces into the box between the five frames of drawn comb we had previously inserted. Although he had to brush the bees aside with his bare hands each time he cut into the branch, they remained docile.

It had all been so easy and peaceful. Then Bruce's perfectionist nature took over. Forgetting that the other bees still clinging to weeds and branchlets would probably find their way to the new hive box, he decided to help them along. He carefully pruned the weeds and picked them up to carry over to the hive. In a matter of seconds, the contented buzzing turned to an angry hum. One bee stung him on the head, another on the hand. He dropped the weeds near the hive entrance and ran.

Unfortunately there were no calendula flowers in bloom to rub on his stings (we had tried this before and found that it worked), but we did try the juice of an aloe verae, the so-called medicine plant. Nothing seemed to help, though, not even ice water. By noon, his hand was swollen

to twice its normal size and his knuckles had disappeared. He had never had such a severe reaction before. Usually he dismissed stings contemptuously as minor pinpricks causing only a few hours of vague discomfort and he had wondered why beekeepers worried about stings. Now he knew!

Nevertheless, he managed, left-handed, to put wax foundation in five more frames so we could fill up the hive box by night fall. I volunteered to put them in but I cautiously suited up. I had decided not to use the smoker, fearful that I might drive them out of their new home. Nervously I stuck the hive tool into my pocket and picked up the five frames, remembering a friend of mine who had recently been stung through her head net by a bee from an angry, queenless hive. Her head had been swollen and sore for days. But I had a job to do, I sternly told myself, and with a martyred air, I strode into the beeyard. (It's amazing what I'll do to get free honey!)

This time it was Bruce who watched from a safe distance. Still, I believed that he had been stung because that second bunch of bees had suddenly realized that their queen was gone and that that creature (Bruce) had had something to do with it. I had kept an eye on the hive all day, and it looked to me as if it had already settled down which meant the queen was with them.

Gingerly I lifted off the hive cover and then the inner cover which was black with bees. They had already begun making comb on the inner cover. The hive, itself, was a Maelstrom of bees and I felt defenseless without my smoker. I needn't have worried though. Despite the incredible number of bees, they seemed to be in good spirits. Even when I carefully lowered the frames into the mass of bees, they refused to be upset.

I didn't have quite enough nerve to reach my gloved hand into the bottom of the hive to remove the branches and so I could get only four more frames into the box. At that point, I decided to super the hive. Bruce suited up properly and joined me. Carefully he jimmied the nine frames around the branches but it was obvious that the bees were getting restive. Trying our best not to crush any, we put the super on top of the hive box and carefully replaced the inner and outer covers before calling it a day. Despite one mistake, we felt elated. Now we could really feel ourselves a part of the beekeeping fraternity. We had successfully caught and hived our first swarm!

July 21 — a humid, overcast Saturday but in view of the swarming last weekend and the delicious smell of honey emanating from the hives, I decided it was time to extract. We had no more spare supers and, besides, judging from the intense activity even on cloudy days, I assumed the basswood run was still on. However, when I went down to feed the chickens, I noticed honeybees all over the milkweed which had finally opened.

This time we spread newspapers thickly on the kitchen floor before we started. And Bruce devised a new way to get honey-filled frames from hives to house. He suited up and started the smoker. Then he enlisted the aid of our three unsuited boys who stood well away from the hives. After he shook off each frame and carefully brushed the remaining bees away, he handed it to one of the boys who ran it down to the kitchen door where I was waiting to grab it. In that way, we piled up fifteen frames with nary a sting or stray bee.

To our surprise, the first few hives had surplus supers of honey filled but not capped. Only the first hive yielded one and a half capped supers. This gave us thirty-six pounds of a delicious, medium-colored honey — enough to keep us supplied for a couple months. Obviously, there had been no locust honey and judging from the color, no basswood run either. As usual, we left the equivalent of two and a half deep supers of honey on the hives before extracting any honey for ourselves so as least the bees already had enough stores for the winter.

Bruce also checked the new hive which was rapidly being filled with honey and brood. Evidently all is well there and despite the lateness of the swarm, they will probably get in their winter supply at least.

August 17 — Two weeks of rain, heat, and high humidity. The bees managed to get out between storms and so did I, picking the enormous crop of blackberries the bees pollinated so well in June.

August 19 — We supered the new hive and took honey off the two strong hives — 150 pounds of the best-tasting honey we have ever had. We cannot imagine what gives it its unique taste, presumably an exotic mixture of wildflower nectars, only the honey is very light-colored.

The third hive, the one that swarmed, seemed weak, and we wondered if perhaps there is a defective queen or no queen at all, but, as usual, we were so pressed for time, that we didn't take the hive apart and check.

September 9 — Fall weather, which promises to be nicer than the summer, has arrived. Thirty-seven acres of goldenrod hum with bees. Bruce, who wanted to cut the field grumbled at my insistence that the bees will make delicious honey from it. "What about last year," he reminded me. "We didn't get one jar of goldenrod honey."

"Well, that was unusual," I countered. "Why, goldenrod is the most prolific, dependable honey plant we have in Pennsylvania."

October 1 — After so many lovely days in September, the month went out in showers. But despite the weather, we have managed to fill the freezer and canning shelves with vegetables and fruit. The goldenrod is still loaded with honeybees and an unusual number of monarch butterflies, but many of the flowers have faded.

October 8 — This week has been rainy and cold but we decided it was now or never for fall honey extraction. My friend, whose hives are forty miles west of here, reported a good goldenrod honey yield. Another friend, who has hives scattered all over the county east of us, reported no crop at all. Which will it be for us? I decided not to prepare the kitchen until we checked the hives.

The news was grim. The third hive was almost gone. The first and second hives had excess supers with only a sparse scattering of capped honey — not enough to warrant the trouble to extract it. Instead, we made sure their winter stores were adequate, juggled the good frames into the most advantageous positions and hammered hardware cloth over the entrances. One piece of good news — the new hive was thriving with two and a half deep hive boxes filled with honey.

We sighed and turned away. The second year with no goldenrod honey. "Next year I'm cutting the field," Bruce declared. "Not all of it," I answered quickly, still hopeful that maybe next year we will have goldenrod honey.

Then I straightened my shoulders and thought that considering the cold, rainy summer, 186 pounds of excess honey from two hives wasn't that bad a total — enough for us to eat anyway. And this year I spent less than $10.00 for bee supplies. Since, at the end of last year, our total spent on beekeeping supplies had equalled the value of our crop, our 186 pounds were almost free. Despite losing one hive, we had gained another.

In our own way, we had accomplished the goals we had set for our beekeeping

(Continued on page 357)

Bees, Bears And A New Bear Fence

By WILLIAM G. LORD
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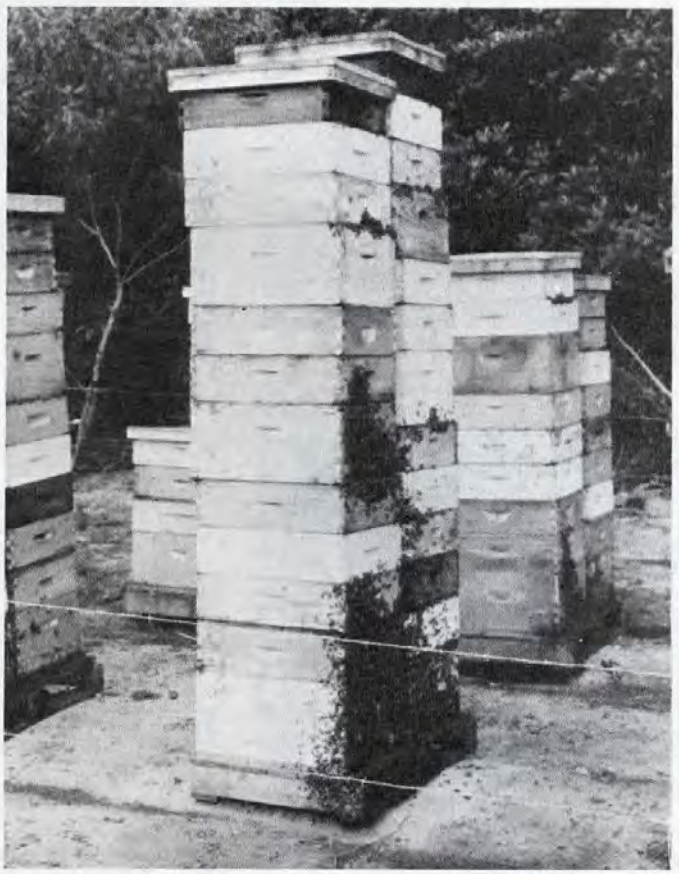


1979 gallberry crop in Eastern North Carolina. These supers were put on one at a time. Photo by William Lord.

BEARS, AFFININTY for bees and honey is acknowledged by many segments of our society and culture. Andrew Wyeth prints of a bear robbing a bee tree are available at many art stores and expositions. Most children can tell the story of Winnie the Pooh and his charming penchant for honey. Many beekeepers capitalize on the bear-honeybee connection by selling honey in the very popular honey bear containers. Bears are frequently pictured as big, furry, cuddly creatures in the popular literature and it is simply hard to imagine that these lovable brutes could cause such damage and destruction to beekeeping operations. Any beekeeper that has experienced bear depredation to his bee operation will attest to the fact that bears certainly don't use a hive tool in their " manipulations." Bee yards that have been "visited" by bears frequently look as though they had been hit by lightning or a tornado, rather than a genial Winnie the Pooh.

In a effort to stop bear damage to beehives man has resorted to many cunning devices. There are documented reports of the use of lion urine, voodoo dolls, red pepper, flares, car horns, flashing lights, sulfur and guard dogs. Various wildlife departments have developed expensive bear-proof platforms that have also turned out to be beekeeper and beekeeping-proof as well. Conversion of school buses, semi-trailers, and cotton trailers to "bee buses" and the like have been attempted, but these enclosures are hampered by limited space, difficult working conditions, and high costs. Aversive conditioning — conditioning bears to avoid bees and honey by making them sick when they eat emetic compounds in special bait hives — has been extensively tested but has met with limited success, at best. To date, the most effective method of protecting honeybees from bears is by the use of electric fences.

Bee yard in Eastern N.C. with gallberry honey crop on hives. (June 1979) enclosed by new design bear fence. Photo by William Lord.

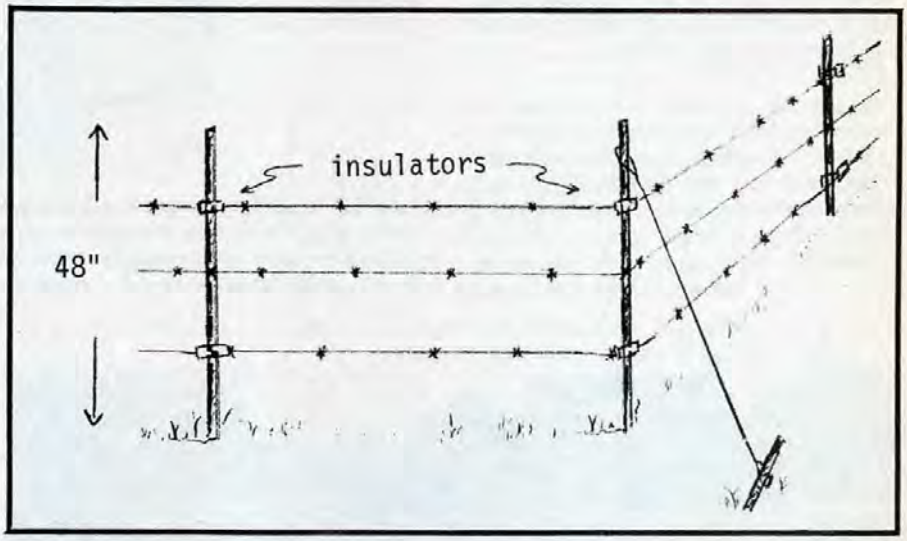
The first report of the use of electric fences to thwart bear depredation of beehives comes from California in the late 1930's. These first fences were inspired by electric fences that were used in concentration camps in World War I. Electric fences that are properly designed, well built, and periodically checked and serviced offer very good bear protection. Many fence designs have been formulated and tested. The most commonly constructed fence consists of wooden posts, 4 to 6 strands of light gauge barbed wire, insulators, fencer and a power source. The posts are well set in the ground and the

wire is spaced at 8 to 12 inch intervals to insure a proper ground and to prevent digging, a poultry or hog wire apron is frequently laid on the ground around the fence. A gate is provided for easy access, and the fencer and battery are usually hidden in a hive body or working hive to prevent thefts. Good electrical connections between ground and the fencer and the fence are a must for this system to work. Weeds must be kept from growing up and shorting out the fence by periodic cutting or the use of herbicides. One point that must be stressed is that the weak link in any bear fence is the electrical system. Weeds should be kept down and batteries should be changed and charged regularly, but little can be done about occasional acts of God such as fallen limbs or trees, or lightning strikes other than constant vigilance.

This is a typical "traditional" bear fence in eastern N.C. bear country. Photo by William Lord.

Traditional bear fences are expensive to construct in terms of labor and materials, and by design are pretty much permanent. To justify the expense of such fences, bee yards must be able to hold a large number of hives and must present the prospect of being a reasonably permanent location. It is therefore, small surprise that migratory beekeepers' bee yards and other newly established bee yards frequently go unfenced and consequently suffer excessive bear damage. This problem, and several of the inherent design problems of traditional bear fences have been addressed and in many was solved by a new bear fence design developed in North Carolina.

First and foremost, this fence is simple. Five foot long, ½ inch concrete reinforcing bars (rebar) are used for posts. These posts are cheap and durable and can be driven in the ground in a few seconds by using a short piece of pipe with a cap on one end as a driver. These posts can be spaced from 10 to 20 feet apart. Three strands of light gauge barbed wire are used to wire the fence. These wires are spaced 10 inches apart from the ground up and the upper and lower wires are attached to the posts using plastic insulators that slip over the post and have a screw-on back. For the sake of time and structural integrity, a length of garden hose or PVC pipe can be slipped over the corner posts and the two hot wires can simply be wrapped around them. The middle wire serves as a ground and is wrapped around or wired to each metal post, therefore, insuring a ground connection by having each metal post serve as a ground rod. A gate can be fashioned by using spring-loaded, insulated gate handles. The final step is to drive a 2 foot ½ inch diameter rebar stake about 4 feet out from each corner post and tighten the fence by running a wire from the corner post to the stake. A fencer can now be connected and the fence will be operational.



This fence can be erected in a variety of sizes and configurations in an hour or less by two people. The fence can be dismantled in even less time and is easily moved. This fence has been successfully tested in several bear sanctuaries in North Carolina and is becoming increasingly popular with both migratory and permanent beekeepers within the state. The fence is simple to construct and simple in design. There are no masses of wires for the bear or beekeeper to become tangled in with a subsequent short in the fence. There are no poultry or hog wire aprons to short the fence on or wrap around a truck axle. Finally, this fence is inexpensive to build. Little labor is required to construct the fence, the components are cheap and durable and can easily be moved to new locations. A final precaution must be noted however, in that this bear fence can only function properly with a good fencer, a hot battery and good electrical connections. One manufacturer has recently introduced a new line of fences that have their batteries recharged by a small solar cell attached to the fencer. This innovation may provide a good solu-

tion to the problem of power sources for bear fences.

Materials list for 24 x 100 fence
(will hold 50 hives)

750 ft. 18-gauge barbed wire	$ 8.42
22 5-ft. rebar posts	13.27
4 2-ft. rebar stakes	1.18
44 insulators	3.52
3 gate handles	3.00
	$29.39
12 volt battery	$36.00
12 volt fencer	32.60
	$68.60
Total Cost	$97.99

Shows posts and screw on insulators being put on posts. Photo by William Lord.

Writing Your Congressman Is Effective

By GLENN GIBSON, EXECUTIVE
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P.O. Box 368
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Phone 405-352-4126

SEEMINGLY, WE don't accomplish very much here or in Washington. However, here and there we can see signs of a few results. You have noted that we continuously ask members to write their congressmen about problems of our industry. How many of you actually write? Never as many as we like, but enough to keep us going.

Once again, I am going to ask you to contact your Senators and Representative in your state about problems facing our industry. Even though it may appear to you that we have no chance of winning, we still hope that you will write them. Regardless of our chances for success or failure on any particular project, please bear in mind that whatever we do on one project will certainly be helpful on a later project. This is true because we will be dealing with the same people on the same problem with a different approach. For instance, our campaign to keep the Beekeepers Indemnity Program involves the same information that we will use to justify our requests from the Environmental Protection Agency and the Department of Agriculture. Bear in mind that all funding of any program is approved by the Appropriations Committees. Needless to say, a well informed committee certainly increases our chances of success.

Your state's congressional delegation may not include a membership on the Appropriation or Agriculture Committees. Write them anyway. Your letter will be an important part of our overall campaign.

Congressmen sometime exchange information, especially so, if you indicate in your letter that you belong to a state and national organization. This association with a group is easily told. You may want to open your letter like this — As a member of the American Honey Producer's Association; or I am a member of the Board of Directors of the American Honey Producer's Association.

If you are an officer in an organization, it will be helpful if you will sign your name as such. If association stationery is available, by all means, use it. It is also helpful if you will send us copies of the correspondence to and from Washington. In this way we can evaluate the support we might have.

Frequently, a first contact with a congressman will net you a form letter. Over the years I have seen hundreds of these. Most generally they are worded like this—

First paragraph —

Thank you for your thoughful letter of December 25.

Second paragraph —

—indicates that you have some problems that need attention

Third paragraph —

I will keep your views in mind when this comes up on the floor.

If you have received a letter like this, chances are good that he will give no further thought to our problem unless you push it. Further contact is definitely needed and you as a knowledgeable beekeeper can tell him the straight story. I can assure you that continuous contact will net results, especially so, if others from your state have written him on the same subject.

If we can get congressmen exchanging information, our chances of success are certainly increased. We promote this whenever the opportunity presents itself and it has paid big dividends. The best example that I can cite is the nice exchange of information between Congressman Tom Steed of Oklahoma and Congressman Bill Burlison of Missouri. Both men are members of the House Appropriation Committee. Over the years Mr. Steed has become the beekeeper's most powerful friend in Washington. He has done a great deal for us in the past and will do what he can for us as long as he is a member of Congress. He seems to like to work for groups like ours. He enjoys talking with other congressmen about beekeeping problems. When he learns about mail coming to congressmen from beekeepers in other states, he feels that he is on the right track and is encouraged to support us further.

To illustrate how helpful this exchange of information can be, I am reproducing a part of a letter I received from Jim Robins, AHP Executive Committee member, dated October 22, 1979 — "We had on our program Rep. Bill Burlison who I know you have had contact with in Washington. He reported to us on the fine work you had been doing and the status of our legislative efforts. He stated in his remarks that Congressmen Steed from Oklahoma for the most part kept him informed as to our needs. As you know they are both members of House Appropriations Committee. I think it's interesting how one Congressman can influence another in our behalf."

Now then, Mr. Beekeeper, Mr Secretary, Mr. Honey-packer, and others write your Senators and Representative in Washington today.

The Hockley Honey Fair

Just Honey and Beekeepers and Thousands of Honey Customers.

By DAVID HAMPTON
Toronto, Ont., Canada

WANT TO HEAR about selling honey that's just a pleasure from beginning to end? You do? Then please read on.

Five years ago, a few of the 120 members of the Toronto District Beekeepers' Association decided that what they needed was a Honey Fair — a place where they could painlessly unload the extra honey that hobbyists are left with after they have sold all they could to their neighbors and friends.

But not a stand at the Bindertwine Festival or the Royal Winter Fair or the Ploughmen's Match.

No, this would be a fair where every seller was a beekeeper and the whole show would be bees and beekeeping equipment and honey plants and the great outdoors and everyone talking bee culture.

We would invite the public. If anyone ever wanted to talk to a beekeeper, this was the place to come. Bring a pail and a friend and some money.

The author ready for business. Along with the usual containers of liquid honey, David features a display of round section comb honey and its equipment.

We were lucky from the start. Toronto is a very large, sprawling city of well over 2 million potential honey customers. And fifty miles north of it, actually just beyond the suburbs, is the beautiful Hockley Valley, famous for skiing and fishing, and for the model apiary known as Eagle's Nest Apiaries. It is owned by our association member and friend Stanley Vasarajs.

Eagle's Nest is 50 scenic acres, once a snowmobile resort, that is now planted to large plots of sweet clover, buckwheat, rapeseed, phacelia, motherwort and other nectar crops. Acres of lawn surround a chalet-style modern honey house and, back in the trees, beside a brook, is the neatly-maintained home yard of 60 colonies of honeybees.

The Honey Fair and exhibit was Stanley's idea, and he offered his place as the site. It proved to be a good idea and a perfect place to start.

Visitors crowd around the screened-in gazebo to see a club member open and manipulate a hive of live bees. In the foreground is a plot of nectar-producting motherwort.

So we set the date for the second Sunday in September 1975, called the newspapers, set up signs, phoned the radio stations and got ourselves ready.

Three weeks later, on a beautiful early fall day, the first Hockley Honey Fair was held. One hundred and fifty people came.

The next year we attracted two thousand. The following year three thousand. The next year it rained, but still more than two thousand people showed up. This was our clientele.

What do these visitors from the city see?

First of all a very large and well-organized parking lot. Big signs say "Free Parking". This keeps the cars from parking on the road and causing problems for the police.

Having left their cars, the visitors walk down a driveway, through a gap in a poplar windbreak and suddenly see it all before them. A huge area of green lawn is dotted with displays and groups of interested onlookers. To the right is a well-marked information booth, and behind it is the honey house.

At the information booth the visitors may pick up one of the association's own honey cookbooks for a dollar and a free information sheet telling about our club, who our members are and where our monthly meetings are held.

But most seem drawn to the rustic honey house itself with its large windows and super-scrubbed interior. Some go right in, others look through the glass.

Inside, Claude is slowly and deliberately feeding choice frames of well-capped honey into the automatic uncapper, pausing to show or tell anyone how it works. Vic is taking his time filling a 50-frame stainless radial extractor, while Vivian is filling customers' pails with new honey fresh out of the tank.

Outside, a long row of beekeepers' cars and pickups are parked side by side along the edge of the grass. Each vehicle has its own picnic table (and tablecloth) heaped with everything a beekeeper sells: Jars and pails of liquid honey, comb honey in various forms and packs, blocks of wax, foundation flowers, ceramic pots.

Plus attention-grabbers: Antique equipment, bowls of flowers, trophies won in competition, somebody simply turning the handle of a hand extractor. Everybody visiting everybody else.

Chris Bishop explains how honey gets from the comb to the jar. Owners of suburban orchards, U-pick farms and herb gardens learned the advantages of keeping a few hives for honey and pollination.

From time to time club members guide groups to the actual bee yard to see the colonies. (Clever Stanley for the last week has been setting out wet supers far in the **opposite** direction to where the crowds are, so that the bees will be doing their robbing **away** from the Fair area.) Other groups are being shown the special plantations of nectar-producing crops.

"Now how do you explain that?" Informal exchanges of problems and advice between beekeepers went on all over the Fair. Eagle's next owner Stanley Vasarajs seems stumped by this one.

All around are small exhibits attended by club members who haven't come to sell honey, but to tell and show the public details of our special craft. Some are assembling frames, fastening foundation or making candles. Others are explaining set-ups for 2-queen systems, installing packages or rearing queens.

A screened gazebo has two colonies of live bees in it. A beekeeper, properly suited, is opening the hive for the visitors and their childern to see, safely on the other side of the screen.

After a while, the people start looking around for something to eat. After all, it is a bracing fall day and some have been here since ten o'clock. At first we just had a table of home-made honey cooking for sale: Bread, cake muffins and so on, plus lots of coffee. Later we sold hot dogs, and last year we added a corn shack, where corn on the cob was boiled in a huge maple-syrup kettle hung over an open fire. This was a favorite with everyone.

(Continued on page 356)

Beekeeping Technology

Extractors — A Synopsis of Their Development

By DR. JAMES TEW
Wooster, Ohio

EXTRACTORS, LIKE foundation, smokers, and hive dimensions, are a piece of equipment that many beekeepers often fail to fully appreciate. Prior to the advent of extractors, honey and comb were crushed together, poured into a cloth bag, suspended above a container and allowed to drain for several days. To speed the draining process, heat was often times applied to the bag. High temperatures resulted in a dark-colored and low-quality product. Honey processed by this technique was referred to as "strained honey". The first extracted honey offered for sale was so clear and clean that the buying public doubted it's purity. The sale of several year's crops were required to develop buyer confidence.

Major Hruschka, an Austrian from Vienna, is credited with recognizing the potential for using centrifical force to throw honey from the combs. After this observation was made, many innovative beekeepers designed extracting machines to fulfill their individual requirements.

In 1870, H.O. Peabody manufactured an extractor for sale to the general public, thus becoming the first to sell commercially constructed extractors. The machine was unique in that the entire extractor rotated on a stand. Inspired by the Quimby-designed extractor, A.I. Root developed a machine and put it on the market under the name of "Novice Extractor". The extractor consisted of a metal can in which a frame-supporting basket was positioned. One turn of the hand-operated crank resulted in three basket revolutions. The simple design of this extractor has not changed significantly to date.

An exception to the somewhat simple design of early extracting machines was the extractor designed by T.W. Cowan in 1873. Cowan apparently was the first to develop the reversible extractor, a machine that could extract both sides of the comb without having to remove the frame. Hinged baskets supporting the frames were rotated 90° after extraction was completed on one side of the frame. This rotation exposed the unextracted side to centrifical force. Ultimately, both sides were extracted without removing the frame from the extractor.

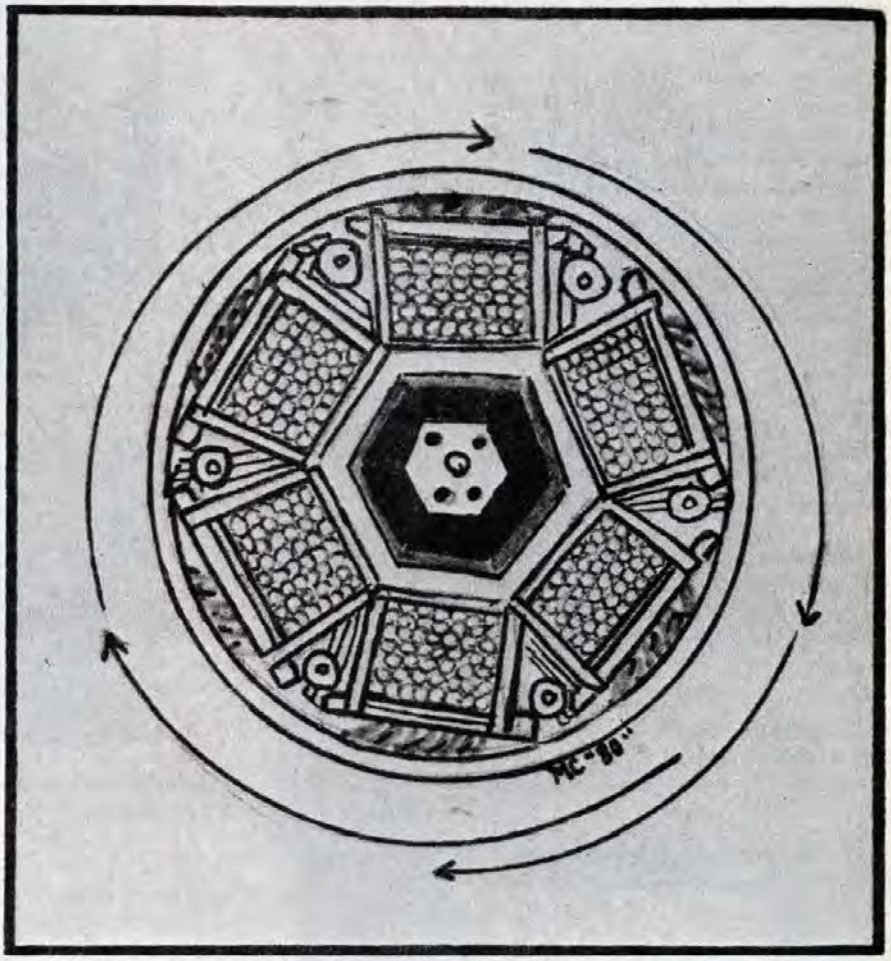

Fig. 1 Radial extractor design that loads from the side.

This concept was honed even finer in later machines. Root marketed an automatic multiple reversing extractor that only required slowing the extractor basket speed to rotate the baskets. A further modification of the reversible concept was demonstrated in the Central Pivot Reversing Machine (The Buckeye Extractor). Baskets could be rotated while the machine was in motion by means of a geared wheel that drove a smaller gear that was attached to the top of extracting baskets. Extractors of this type are still manufactured by the Superior Honey Company in the United States. Such machines are useful when extracting thick honey or when extracting honey from fragile combs.

The concept of removing honey from both sides of the comb at once was described about fifty years prior to the introduction of radial extractors. When radials were first considered, it was quickly noted that hand-powered tangential extractors were much faster that hand-powered radials. The radial idea had to wait for the advent of gasoline engines and electric motors. The addition of mechanized labor justified a significant increase in the number of frames that could be extracted at one time. Suddenly, radials, with a much larger frame capacity were much faster than the smaller tangential machines. Two radial extractor designs are diagramed in figures 1 and 2.

Aurthur Hodgson built the first practical radial in 1923. He patterned his machine after the Bohn extractor. This concept is demonstrated in machines manufactured by Cook and Beals, Inc. and Maxant Industries, and is diagramed in Figure 1. The Cook and Beals machine has a frame capacity of 128 combs and if properly set up may be loaded and unloaded in 3½ minutes.

Generally, radials that position frames like spokes in a wheel have been more popular (Figure 2). The A.G. Woodman

Co. and The A.I. Root Co. manufactured early radials that are still in use today. Initially, the electric motor on most of these machines were attached to the top of the extractor. Today, Dadant and Sons, Inc. and Hubbard Apiaries manufacture machines with electric motors that are much smaller in size but with no decrease in power. These machines operate without visable gears or belts. An idea long favored in Europe is to place the motor and rotating mechanism beneath the extractor. These machines are quite easy to load, but a bit more tricky to repair.

Naturally, an idea that had to be tried was the semi-radial extractor; half tangential — half radial. A machine of this type was developed by C.A. Hungerford in Australia and was manufactured for a while by The A.I. Root Co. The extractor looked like a reversible extractor that had "too many baskets". The machine was capable of running in either direction. After one side of the combs was extracted, the extractor basket direction of rotation was reversed, the baskets "flipped" over (partially on each other) and the other side was extracted. As with other types of reversibles, thick honey or weak combs were normally extracted better with this type machine.

A few honey producing operations in the United States are using specially designed extractors that take entire supers. Frames are permanently mounted in supers and are uncapped and extracted without ever being removed from supers. Obviously much time is saved when supers, as opposed to individual frames, are manipulated.

Extractor designs have stabilized during the last few years. Increasing manufacturing costs may have had an effect on new ideas or it may be that the evolution of the extractor is nearing completion.

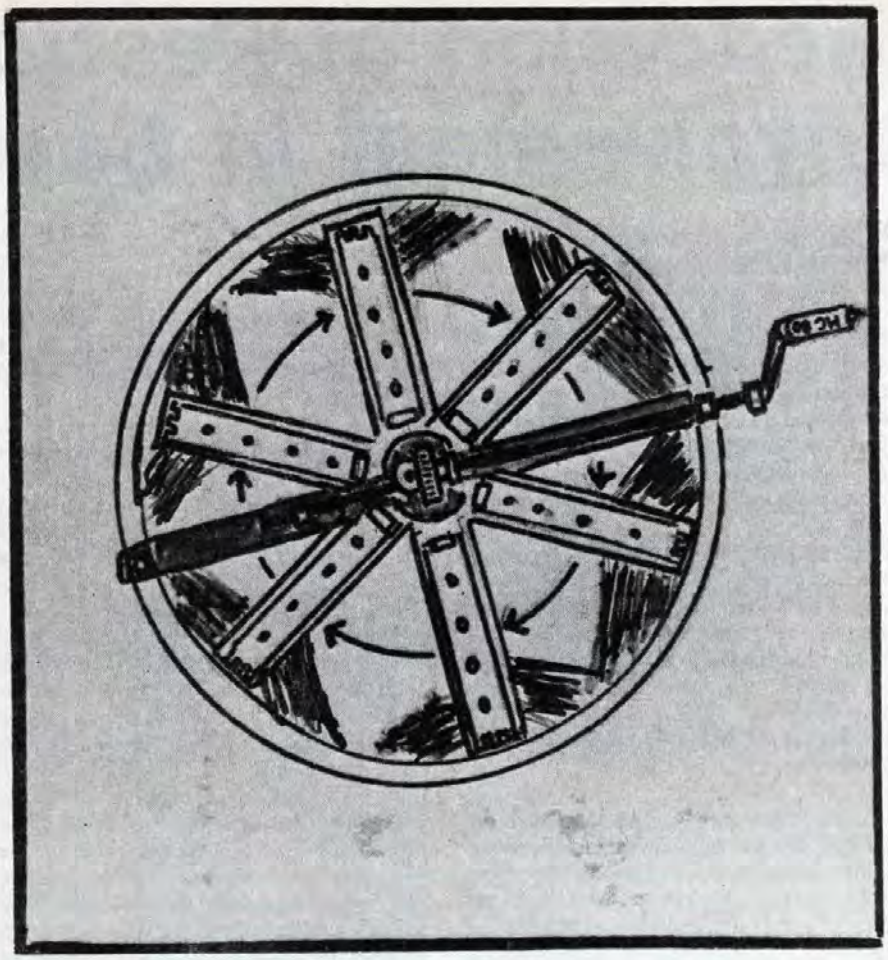

Fig. 2 Radial extractor design that loads from the top.

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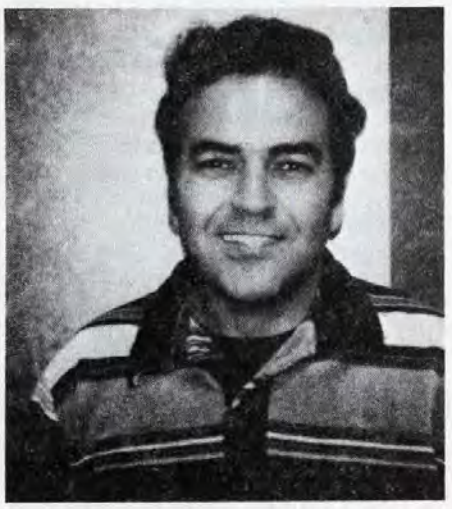
1. **History of American Beekeeping**, Frank C. Pellett. Collegiate Press, Inc. Ames, Iowa. 1938
2. **ABC & XYZ of Bee Culture**, E. R. Root, Editor. The A. I. Root Co., Medina, Ohio. 1947.
3. **ABC & XYZ of Bee Culture**, 1975 edition.
4. Selected Bee Catalogs from past years.

1980 EAS Conference Features Bee Products Specialist

Hal Neiman



HAL NEIMAN of Green Grown Products, Inc. of Santa Monica, CA will be one of the featured speakers at the Eastern Apicultural Society Conference to be held August 13th through 16th at the University of Vermont in Burlington. Hal will be talking on production and marketing of propolis, pollen and royal jelly. Green Grown Products is the largest seller of bee pollen in the United States and also one of the largest dealers of royal jelly in the country. They are committed to all of the products that come out of the beehive and a new field for them is that of propolis. As soon as a domestic supply of the raw material is available, they plan to produce a line of propolis products. This should be a very interesting talk for beekeepers who want to learn more about the medical and nutritional properties of these products from the beehive and for those who want to expand their marketing beyond honey.

Reporting of Pesticide Involvement In Bee Kills

By CHARLES W. MILLER, Ph.D.
Washington, D.C.

THE EPIDEMIOLOGIC STUDIES PROGRAM, Health Effects Branch of the Office of Pesticides and Toxic Substances, EPA is interested in obtaining information on pesticide related bee kills. The purpose of this article is to acquaint the reader with the program and the proposed mechanism for reporting.

The Epidemiologic Studies Program has a nationwide network of eleven projects within the continental United States and one in Hawaii. Table 1 provides a listing of these projects and their location for future reference. The projects are supported by federal funds provided through a cooperative agreement/grant mechanism.

The mission of the program through the various projects is wide ranging and includes such work as studies on farm worker health and safety, pesticide usage (locally and nationally), pesticides in human milk, analytical method development for detection of pesticide residues in human tissues and fluids (blood, urine, milk), and various other pesticide-health effects studies. National studies recently completed by the unified effort of the projects and worthy of mention here were the National Studies of Hospital Admitted Pesticide Poisonings (1971-1973 and 1974-1976), and the Occurrence of Chlorinated Hydrocarbon Pesticides in Mother's Milk (1975-1976). A second study on the presence of pesticides in approximately 2000 samples of mother's milk is presently in progress.

As one might expect, each project is staffed with a variety of scientific disciplines. Each project has a Pesticide Incident Monitoring Coordinator, whose function is to report and, when possible, investigate incidents in which pesticide involvement is suspected. To accomplish this, the Coordinator contacts various state and local organizations to solicit the voluntary reporting of such episodes as human and animal pesticide poisoning, fish kills, and crop damage. In addition to having responsibility for the state in which the project is located, the individual may also have responsibility for neighboring states. A list of the coordinators, their location and areas of responsibility is also presented in Table 1. **It is to these individuals that reports of pesticide incidents, and of special inportance to the reader, incidents involving bee kills should be reported.**

Figure 1 represents a Pesticide Incident Report form and is provided to show the reader what type of information is sought. This form, when completed by the Coordinator, is forwarded to the Epidemiologic Studies Project in Miami where the data are entered into a computer file. At present approximately 32,000 pesticide incidents are stored on computer data tapes. This information is a valuable resource to EPA since it can be used to illustrate the magnitude of a problem with respect to pesticide exposure. As a hypothetical example, it would be possible to show the number of pesticide poisonings occurring among children, the pesticides involved, and how the product was made accessible to the child. The Agency could then use this information in making decisions regarding packaging or use of specific products or chemicals.

At present no hard data to indicate the magnitude of the problem concerning the association of pesticides with bee kills are available. It is for this reason that the reader's cooperation is sought in voluntarily reporting such incidents. In particular, it is requested that beekeepers notify by letter the Pesticide Incident Monitoring Coordinator who has reponsiblility for the owners area of residence, of the occurrence of a bee kill. The letter should contain as much information as possible about the incident and the reader is again referred to Figure 1 as to the type of data sought. When reporting an incident by letter, the owner should include his home address **and phone number.** This last item is very important so that calls can be made back to the individual if additional information is needed. If the project location is close enough, the owner may wish to call the Coordinator directly so that an on-site investigation may possibly be made.

The work load of the projects laboratories is such that it will not be possible to analyze samples from all bee kills to confirm pesticide involvement. Presently, the project laboratories would have to limit analytical work to kills in which 20 to 25 hives are involved; after the magnitude of the problem of bee kills is determined, it might be possible to lower this figure to situations in which 5-10 hives are involved.

In those instances where 20 to 25 hives are affected, direct phone contact with the project as soon as possible would be highly desirable. The Coordinator at the project can provide suitable containers for sample shipment and instructions on how and when to best mail the samples to insure that the samples arrive in good condition.

Basically, dead bees and recently harvested pollen are the required samples. Bees whose bodies are dry, hard and lightweight should not be included in the sample since, if pesticides are involved, the possibility of detecting organophosphates or carbamate insecticides in such insects is reduced due to the limited persistence of chemicals. Dead bees whose bodies are soft to the touch or live bees who exhibit distress symptoms characteristic of pesticide intoxication are the preferred sample. Ideally two cups of bees should be collected, as this quantity insures a greater probability for residue detection.

Pollen samples may be of two types. If possible, two samples consisting of three teaspoons each of recently colleted pollen should be taken. Should this not be practical, then four 2x2 inch sections from the brood chamber containing the pollen can be used. If we can recognize, from the color of the pollen, the crop it may have come from and which might be suspected as the pesticide source, please note this in your discussion with the project representative.

Both samples (bees and pollen) should be wrapped separately in aluminum foil, placed in a suitable clean glass container, and stored in a freezer as soon as possible. The purpose of the aluminum foil is to prevent cross contamination of the sample with whatever the glass container previously held. Placing the samples in the freezer reduces pesticide loss by volatilization or metabloic/microbial degradation. The glass containers should have a tight

fitting lid. As an added precaution, the glass container could also be placed in a plastic bag which can be sealed.

Because of laboratory work load and scheduling, it may not be possible to analyze samples immediately. However, once the analysis is completed, a copy of the results will be sent to the originator of the sample.

The degree of cooperation received will dictate the success or failure and possible discontinuation of this effort. Certainly, there will be problems at both ends of this program as proposed. It is hoped that all involved will work together to solve such problems as may occur and that this effort will provide data useful to both beekeepers and the Pesticide and Toxic Substances Office of EPA.

Table 1. Epidemiologic Studies Project Locations and the Pesticide Incident Coordinator to Whom Bee Kills from Various States Should be Reported.
PIMS Coordinators

(Washington, Oregon, Alaska)
Alan Culwell, Lynden Baum
Epidemiologic Studies Project
DSHS — Health Services Division
P.O. Box 190 L 4-7
Wenatchee, Washington 98801
Telephone: 509-662-8161

(Montana, Idaho)
Dick Budell
Epidemiologic Studies Project
Department of Health and Welfare
2373 Old Penitentiary Road
Boise, Idaho 83720
Telephone: 208-334-2233

(Georgia, Florida)
Kitty Griffith/Erica Kochler
Epidemiologic Studies Project
Division of Biostatistics R-30
University of Miami, School of Medicine
P.O. Box 016960
Miami, Florida 33101
Telephone: 305-547-6475

(California, Nevada)
Charlie Fisher
Epidemiologic Studies Project
Department of Community Health
University of California,
School of Medicine
Davis, CA 95616
Telephone: 916-752-7117

(Iowa, Indiana, Illinois, Michigan, Minnesota, Missour, Ohio, Wisconsin, Nebraska, Kansas)
Vic Beat/Lyle Waters
Epidemiologic Studies Project
University of Iowa
School of Medicine
Oakdale Campus, AHRF
Oakdale, Iowa 52319
Telephone: 319-353-5558

(Mississippi, Tennessee, Kentucky, Alabama)
Rubel Cowart
Epidemiologic Studies Project
Mississippi State, Laboratory
P.O. Box CR
Mississippi State, Mississippi 39762
Telephone: 601-325-5103
(Lab — 601-325-4308

(Oklahoma, New Mexico, Texas, Louisiana, Arkansas)
Tony Mollhagen, Assistant Director
Epidemiologic Studies Project
Texas Tech University,
School of Medicine
152 E. Stenger
San Benito, Texas 78586
Telephone: 512-399-5352

(S. Carolina, N. Carolina, Maryland, W. Virginia, Virginia)
Sam Caldwell/Bill Upham
Epidemiologic Studies Project
Preventive Medicine Section
Medical University of South Carolina
171 Ashely Avenue
Charleston, South Carolina 29403
Telephone: 803-792-2281

(Colorado, N. Dakota, S. Dakota, Wyoming)
Bill Wheeler
Epidemiologic Studies Project
Institute of Rural Environmental Health
Colorado State University — Spruce Hall
Fort Collins, Colorado 80523
Telephone: 303-491-7038

(New Jersey, New Hampshire, Vermont, Rhode Island, Massachusetts, Connecticut, New York, Pennsylvania, Maine)
Pete Hauge
Epidemiologic Studies Project

(Continued on page 356)

OMB No. 158-R0008

YEAR REPORTED | EPA REGION | U.S. ENVIRONMENTAL PROTECTION AGENCY — PESTICIDE INCIDENT REPORT | FILE NUMBER

This report is authorized by law (7 U.S.C. 135). Although you are not required to respond, your cooperation will help assure that our information is comprehensive, accurate, and timely. Use Section X on the reverse for a brief description of the circumstances leading to the incident and for additional comments. Please read the instructions before completing this report.

SECTION I – IDENTIFICATION

NAME OF REPORTER | ASSOCIATION/AGENCY | DATE OF INCIDENT | DATE OF REPORT

ADDRESS (street, city, state, and ZIP code) | PHONE NO. ( ) | LOCATION OF INCIDENT (city, county, and state)

SECTION II – PESTICIDE DESCRIPTION

IF MORE THAN ONE PRODUCT INVOLVED, CHECK HERE ☐ AND LIST ON BACK.

PRODUCT TRADE NAME | EPA REGISTRATION NUMBER

ACTIVE INGREDIENTS

TYPE OF PESTICIDE		FORMULATION OF PESTICIDE	
☐ INSECTICIDE	☐ UNKNOWN	☐ BAIT	☐ EMULSIFIABLE CONCENTRATE
☐ HERBICIDE	☐ OTHER (specify):	☐ DUST	☐ TECHNICAL GRADE
☐ FUNGICIDE		☐ GRANULATED	☐ AEROSOL
☐ RODENTICIDE		☐ WETTABLE POWDER	☐ UNKNOWN
☐ DISINFECTANT		☐ LIQUID	☐ OTHER (specify):

SECTION III – HOW EXPOSED	SECTION IV – CIRCUMSTANCE	SECTION V – LOCATION
☐ ACCIDENTAL INGESTION	☐ HOUSEHOLD USE	☐ HOME OR YARD AREA
☐ ACCIDENTAL SPILL	☐ FORMULATION, MIXING, OR LOADING	☐ AGRICULTURALLY RELATED AREA
☐ SPRAY DRIFT	☐ APPLICATION: GROUND(1); AERIAL(2)	☐ INDUSTRIALLY RELATED AREA
☐ EQUIPMENT FAILURE/MAINTENANCE	☐ FIELD REENTRY	☐ BUILDING: OFFICE, SCHOOL, ETC.
☐ SUICIDE OR HOMICIDE ATTEMPT	☐ DISPOSAL(1); TRANSPORTATION(2)	☐ POND, LAKE, STREAM OR RELATED AREA
☐ UNKNOWN	☐ FIRE(1); FLOOD(2); OTHER DISASTER(3)	☐ NURSERY OR GREENHOUSE
☐ OTHER (specify):	☐ UNKNOWN	☐ UNKNOWN
	☐ OTHER (specify):	☐ OTHER (specify):

SECTION VI – HUMAN(S) EXPOSED

	SEX (M, F, U)	AGE (years)	OUTCOME: POSITIVE EXPOSURE	OUTCOME: NO SYMPTOMS	OUTCOME: MINOR SYMPTOMS	OUTCOME: TREATED BY M.D.	OUTCOME: TREATED BY OTHER PROFESSIONAL	OUTCOME: HOSPITALIZED	OUTCOME: FATAL	OUTCOME: UNKNOWN	MAJOR SYMPTOMS: NO SYMPTOMS	HEADACHE	NAUSEA OR VOMITING	DIFFICULTY BREATHING	ABDOMINAL PAIN OR DIARRHEA	SKIN OR EYE IRRITATION	DIZZINESS	SYMPTOMS UNKNOWN	OTHER SYMPTOMS (specify on reverse)	PRIMARY ROUTE OF EXPOSURE: ORAL	DERMAL	INHALATION	PRIMARY ROUTE UNKNOWN	PHYSICIAN DIAGNOSIS OF POISONING (Lab tests positive)	AT WORK WHEN EXPOSED	CERTIFIED APPLICATOR	OCCUPATION (specify)
1																											
2																											
3																											
4																											

SECTION VII – ANIMAL(S) EXPOSED

TYPE: ☐ LIVESTOCK ☐ POULTRY ☐ WILDLIFE ☐ BIRDS ☐ FISH ☐ PETS ☐ BEES ☐ OTHER (specify):

COMMON NAME(S)	NO. EXPOSED	NO. AFFECTED	NO. TREATED	NO. FATALITIES	WERE LAB TESTS DONE? ☐ YES ☐ NO ☐ UNKNOWN

PRIMARY ROUTE OF EXPOSURE: ☐ ORAL ☐ DERMAL ☐ INHALATION ☐ UNKNOWN

LIST MAJOR SYMPTOMS

SECTION VIII – PLANTS EXPOSED

TYPE: ☐ CROP ☐ ORCHARD ☐ FORESTS ☐ NURSERY/GREENHOUSE ☐ PASTURE/RANGE ☐ HOME VEGETABLE GARDEN ☐ LAWN ☐ FLOWERS ☐ TREES ☐ COMMERCIAL TURF ☐ SHRUBS ☐ OTHER (specify):

COMMON NAME(S)	WERE LAB TESTS DONE? ☐ YES ☐ NO ☐ UNKNOWN	AMOUNT OF PLANTS (number, acres, 20 foot rows, bushels, etc.)

SECTION IX – MEDIUM OR OBJECT CONTAMINATED

☐ WATER ☐ FOOD ☐ VEHICLE ☐ BUILDING ☐ SOIL ☐ OTHER (specify):

AMOUNT OF AREA CONTAMINATED (specify units of measure)	DESCRIBE WHAT WAS CONTAMINATED

EPA Form 8550-5 (Rev. 2-79) REPLACES PREVIOUS EDITIONS OF EPA FORMS 8550-4, 5 (CONTINUE ON REVERSE)

(MOISTEN HERE) (MOISTEN HERE)

Figure 1. Pesticide Incident Report Form Illustrating Type of Information Desired.

Bees Increase Melon Size

BEEHIVES IN cantaloupe fields increased both the number and size of melons in research near the Fruit and Vegetable Insects Research Laboratory, Vincennes, Ind.

SEA research technician Thomas E. Mouzin placed four hives per acre, each containing 30,000 or more bees, on four different farms in the Vincennes area in 1977.

He counted the number of bees and counted, measured, and weighed melons from randomly-selected 40-inch square areas harvested during the growing season. He found that mature fruit near the hives weighed an average 4.9 pounds. Melons from acres 200 yards or more from the hives averaged 4.5 pounds each. The 0.4 pounds-per-melon weight difference becomes significant when multiplied by the thousands of melons harvested per acre, Mouzin says.

"Not only were the melons 8.8 percent heavier," he said, "but the plants close to the hives produced 23 percent more melons than those away from the hives."

Mouzin believes hybrid vigor may be the reason for size differences as a result of more cross pollination of plants closest to the hive. Increased numbers of melons, of course, are attributable to increased pollination.

Mouzin repeated the tests in 1978, reducing the number of hives to one or two per acre, and found similar results. Melons near the hives averaged 4.4 pounds while those 200 or more yards away averaged 4.1 pound each.

David K. Reed, research and location leader, says the figures indicate that one hive per acre provides enough bees, but we need more tests to make a more accurate recommendation.

"Melon growers in the area have been bringing in hives at a high rate since we started the project in 1977." Reed says, "In fact, we had a difficult time finding areas without hives for our tests this year."

Thomas E. Mouzin and Dr. David K. Reed are located at the SEA Fruit and Vegetable Insects Research Laboratory, 1118 Chestnut St., Vincennes, IN 47590. — (By Ray Pierce, SEA, Peoria, Ill.)

From **Agricultural Research**/March 1980

Change In Apiary Law Opposed By Ohio Department of Agriculture

HOUSE BILL 715 was placed before an Ohio Agricultural Sub-Committee but it is being vigorously opposed on all five of its principle points by Gordon Rudloff, State Apiarist.

Some of the proposals of HB 715 are: (1) The elimination of the apiary inspection fee; (2) a change in the method of handling diseased colonies; (3) indemnification for destroyed colonies; (4) a more active role of the Department of Agriculture in bee research; (5) a ruling that the owners of bees be notified in advance of an intended apiary inspection.

Comments from Mr. Rudloff gave a point by point answer to the proposed changes.

In regard to the elimination of the apiary inspection fee Rudloff said that the $1.00 per apiary inspection fee pays only about 10% of the cost of the inspection program and that the fee, set in 1951 was totally unrealistic as it now stands.

Rudloff said that 39 states out of the 47 which have intrastate bee laws recommend in their laws that AFB diseased colonies be destroyed by burning. There is no part of the Ohio apiary law which objects to the beekeeper feeding antibiotics but he stressed that antibiotics do not eliminate the AFB spores.

Rudloff said an indemnity program to reimburse beekeepers for the market value of destroyed colonies would be very costly and may be subject to some abuses.

The functions of the Ohio apiary inspection program are regulatory, Rudloff said. Beekeeping research is conducted at The Ohio State University.

The notification of the beekeeper prior to the intended date of an inspection would be a hinderance to the apiary inspection program because of the added cost and because of the problems that would arise from the notices, cancellations and rescheduling required of county bee inspectors.

Pesticide Drift Petitions

ON JANUARY 17, the Environmental Protection Agency and the Federal Aviation Administration printed in the Federal Register two petitions filed by Friends of the Earth. They are designed to give people more protection from pesticide spray drift.

Friends of the Earth plans to lobby to be sure that the final regulations specifically address beehives as protected property from pesticide spray drift.

The petitions propose several programs:

1. All aerial sprayers must get written permission from persons and property owners before spraying closer than 1000 feet. For ground rig spraying, permission must be gotten within 250 feet.

(Continued on page 357)

Bees Collect Paint From Machinery

A LARGE agricultural machinery manufacturer in New Zealand has a serious bee problem. Over the past three years the Allbulk (Jetstream) manufacturer of the Domino Farmline range of machinery at Dubbo, N.Z. has experienced an ever increasing number of honeybees visiting their spray shop and newly painted equipment to collect paint. This causes serious problems at the plant, requiring either repainting or time-consuming touch-up.

Various types of industrial enamel paints have been used but the bees continue to damage all brands. They do not strip the red oxide primer being used. Repellents such as carbolic acid and benzaldehyde have been used to no avail.

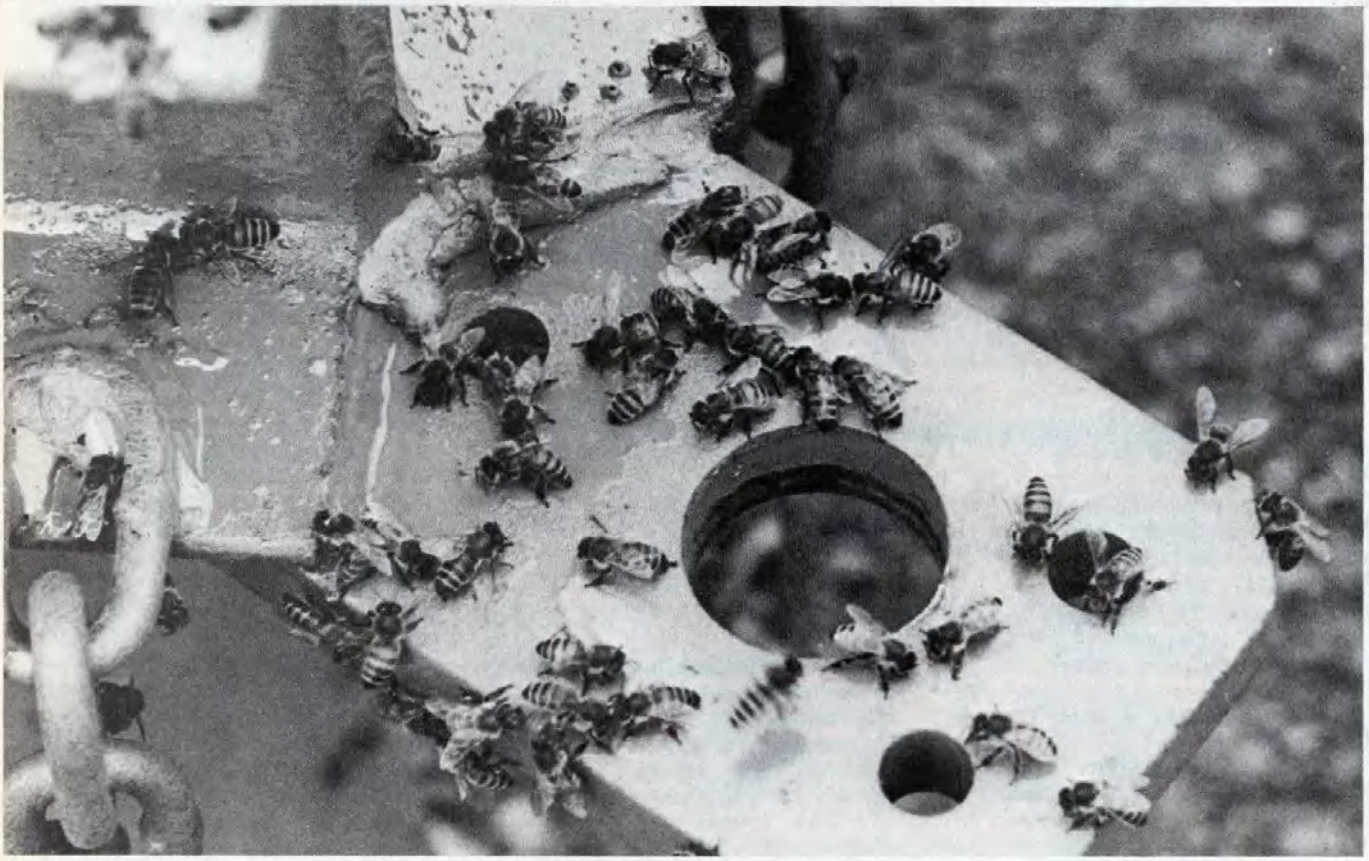
The solution would be a repellent that will repel bees for a couple of days until the paint drys.

It is not possible to remove the bee problem as many of the bees are coming from feral colonies living in trees in addition to some commercially operated hives.

Anyone with a solution to the problem or knows of a repellent that may help is asked to contact Warren Jones, Senior Livestock Officer (Apiculture) NSW Department of Agriculture, P.O. Box 865, Dubbo, N.Z. 2830.

Close up photo of bees collecting paint from machinery.

Close up photo showing the density of bees collecting paint.



Strictly Backlot

By CARL CALLENBACH
135 College Avenue
Elizabethtown, PA 17022

A NUMBER OF kind readers have written to me about the potpourri of literary bits and pieces containing reference to honeybees and honey included in my January 1980 column. All seemed to enjoy the reading; a few took me lightly to task for not including a highly-prized favorite. Maybe it's time to try again?

★★★★★★

Bees are Black, with Gilt Surcingles —
Buccaneers of Buzz
Emily Dickinson. No. 1405

★★★★★★

The bee. . .does the whole business of life at once,
And at the same time feeds and works, and diverts itself.
Jonathan Swift.
A Letter of Advice to a Young Poet

★★★★★★

How doth the little buzy bee
Ignore each shining hour,
And gotten honey all the day
From every opening flower!
Isaac Watts.
Divine Songs

★★★★★★

But when was ever honey made
With one bee in a hive?
Thomas Hood.
The Last Man

★★★★★★

To make a prairie it takes a clover and one bee,
One clover, and a bee,
and revery.
The revery alone will do,
If bees are few.
Dickinson. No. 1755

★★★★★★

There was an Old Man in a tree,
Who was horribly bored by a bee;
When they said, "Does it buzz?"
He replied, "Yes, it does!
It's a regular brute of a bee!"
Edward Lear.
Nonsense Botany

★★★★★★

Honeyed words like bees,
Gilded and sticky, with a little sting.
Elinor Hoyt Wylie.
Pretty Words

Wiser far than human seer,
Yellow-breeched philosopher!
Seeing only what is sweet,
Sipping only what is weet,
Thou dost mock at fate and care,
Leave the chaff, and take the wheat.
Ralph Waldo Emerson.
The Humble-Bee

★★★★★★

No good sensible bee listens
to the advice of a bedbug on the subject of business.
Elbert Hubbard.
Epigrams

★★★★★★

Even bees, the little almsmen of spring bowers,
Know there is richest juice in poison flowers
John Keats.
Isabella

★★★★★★

Here in their bright metropolis of flowers
The banker bees are busy with their gold.
Frank Dempster Sherman.
In a Garden

★★★★★★

For so work the honeybees,
Creatures that by a rule in nature teach
The act of order to a peopled kingdom.
They have a king and officers of sorts;
Where some, like magistrates, correct at home,
Others, like merchants, venture trade abroad,
Others, like soldiers, armed in their stings,
Make boot upon the summer's velvet buds;
Which pillage they with merry march bring home
To the tent-royal of their emperor:
Who, busied in his majesty, surveys
The singing masons building roofs of gold,
The civil citizens kneading up the honey,
The poor mechanic porters crowding in
Their heavy burdens at his narrow gate,
The sad-eyed justice, with his surly hum,
Delivering o'er to executors pale
The lazy yawning drone.
Shakespeare.
Henry V

Where the bee sucks, there suck I:
In a cowslip's bell I lie;
There I couch when owls do cry.
On the bat's back I do fly
After summer merrily:
Merrily, merrily shall I live now
Under the blossom that hangs on the bough.
Shakespeare.
The Tempest

★★★★★★

For among Bees and Ants are social systems found
so complex and well-ordered as to invite offhand
a pleasant fable enough: that once upon a time
or ever a man were born to rob their honeypots,
bees were fully endow'd with Reason and only lost it
by ordering so their life as to dispense with it;
wereby it pined away and perish'd of disuse.
Robert Bridges.
The Testament of Beauty II

★★★★★★

And yet, hang it all, who by rights should be the teacher and who the learners? For those peevish, over-toiled utilitarian insects, was there no lesson to be derived from the spectacle of **Me**? Gazing out at me with composite eyes from their joyless factories, might they not learn at last — could I not finally teach them — a wiser and more generous-hearted way to improve the shining hours?
Logan Pearsall Smith.
Trivia, "The Busy Bees"

★★★★★★

The murmur of a bee
A witchcraft yieldeth me.
If any ask me why,
'Twere easier to die
Than tell.
Dickinson.
Nature

Siftings

By CHARLES MRAZ
Box 127
Middlebury, VT 05753

WE WONDER sometimes how ignorant some people can be who should know better. The remark by the Governor of Wisconsin that his wife did not like honey because it was "bee poop" is a sample of such ignorance. Many people just do not realize that honey is not a product of the bee, The bees only collect it. Honey is a secretion of blossoms and flowers that bees collect for their food, a product of the fragrant blossoms from many plants. I am sure even the Governor and his wife would not be so ignorant as to call the secretion of nectar of blossoms "flower poop". If it is, most people love its fragrance. Did you ever smell a field of clover in full bloom secreting nectar? Or an orange grove in bloom? Or a lot of locust trees in full flower? If anything smells more wonderful than that, I'd like to know what it is. And that, Governor and Mrs. Governor, is where the bees collect their honey, from the flowers. I have a motto on my letter head; " The flower's fragrance is its flavor". That should explain a great deal about honey. It is the life blood of the honeybees, they cannot live without it. It is the natural carbohydrate in their diet. I do hope the Wisconsin beekeepers will give their Governor a few simple lessons about the birds and the bees, and honey.

Lately there has been some publicity about the killer bees in Brazil having reformed. It is only natural when the first wave of hot tempered bees passes through an area, they are a problem. But the bees that remain in the area must become more conservative in their habits or they will not survive. They must avoid excessive swarming and become less aggressive since they do not have the enemies they had in Africa that produced the original extreme aggressive nature necessary for survival.

Also apparently, being less aggressive, they now cross-mated with the more gentle European bees and became more docile so they can at least be handled. It goes on to say that production of honey has greatly increased in Brazil as a result. So rather than the introduction of the African strain of bees to tropical America being a calamity, it will turn out to be of tremendous benefits for honey production in that part of the continent. There may be some beekeepers who consider "foreign honey" a threat, causing lower prices of our U.S. honey. I don't look at it that way; it seems we need more honey on the market. Production in the United States is dropping, and looks like it will continue to drop as agriculture changes to monoculture of cash crops and insecticides. Apparently there is now a shortage of honey for commercial use, bakery grade honey, the type most commonly produced in the tropics.

A far greater evil to the honey business is here, right at home; the open, brazen adulteration of honey with corn syrup on a large scale by some commerical honey packers. Strange we do not hear the bitter condemnation of these presently packing corn syrup and labeling it honey, as we did that "Cheap foreign honey" a few years ago. Some day this foreign honey is going to help our honey business to survive through shortages that are sure to come as domestic production continues to drop.

This is the time of the year that many new beekeepers spend a lot of money to buy queens to requeen a hive that they have finally decided is queenless, after coming through the winter. Most beginners learn much too late when a hive becomes hopelessly queenless. They have turned into drone layers, laying workers, but as long as they have eggs they are not considered queenless. When they conclude that they are trying to raise queens from drone brood and not worker brood, it is too late and the hives are impossible to requeen.

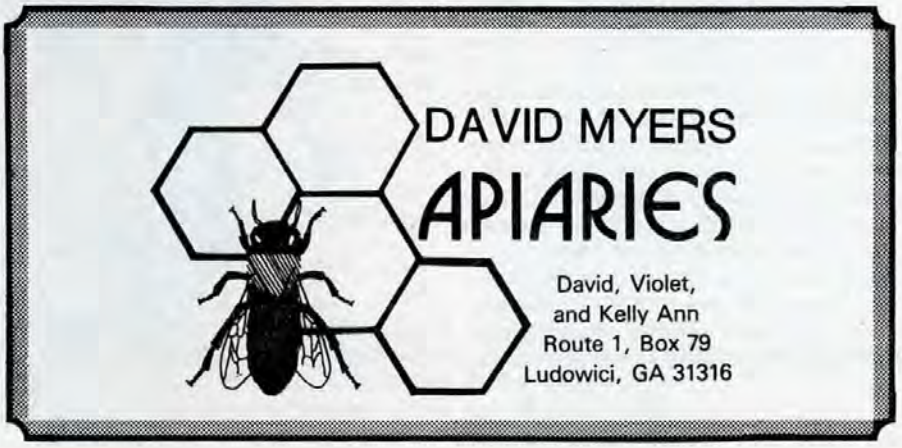
A good rule to follow is to never requeen an old hive that has lost a queen for whatever reason. Always first make a nuc from good bees and brood, and introduce a queen into this nuc. They will always accept a queen. After she starts laying, it can then be united with the queenless hive. By placing the nuc on a nuc board above the hive, it is a simple matter to unite them by removing the nuc board and in its place put a sheet of newspaper. If there is a honey flow on, they will unite with no problems, and the queen is already established with her own bees and brood. Don't murder expensive queens by trying to introduce them into old queenless hives.

It comes as a shock indeed to hear that W.A. Stephen has left us. He will be missed by many. To me, the most wonderful character of Steve was his happy and cheerful nature, he just made everyone happy to be near him. He saw the good in everything, most of all in the bees and beekeepers, all his life. Like most of us beekeepers he perhaps never got rich, but the joy he had in living with the bees and spending much time with beekeepers everywhere, made him wealthy beyond price. Meetings will never again be the same without Steve.

Winston Dunham has also left us, just before Steve. I did not know Winston very well, but he did get his start of beekeeping experience in Vermont, not too far from Middlebury. This was before I came to Middlebury in 1928, so that was a long time ago. Each year we find our old friends leaving us, and the new generations taking our place. That's life, but it really hits home, when so many close to us are gone. As long as there are bees, there will be beekeepers.

Stationary Recreates A Real Honeybee

HONEYBEES are frequently depicted as unreal animals bearing little resemblance to the real thing. A note from David Myers displayed this letterhead drawn by an artist in color and printed by Colson Printing Company of Valdosta, Georgia.



Bee Talk

By DR. RICHARD TAYLOR
Trumansburg, NY

JUNE IS THE month of sudden completion. Even through May life seemed like a struggle. The bees worked feverishly to enlarge their colony, to bring it to a strength adequate to any adversity, and to the point where it could safely divide itself by casting a swarm. In June it achieves this, and from now on we see hives of bees settled into the routine of honey gathering — provided, of course, we have anticipated their impulse to swarm, and taken steps to prevent it. In June the foliage, too, has completed its fullness. A few days ago, it seems, the trees were budding, and it was as though summer would enter casually. But then with a rush it was over, and summer was unmistakably here. Gone are the trillium, columbines, violets and hepaticas of spring, replaced by the sweet clovers, mustard and sumacs that promise honey in the combs.

June is a time for supering up. The first supers went on in May but the first spectacular gains recorded on the hive scale are likely to be in June. June also marks the height of the swarming season. No matter how you tried, or how timely you were in taking precautions, it will be strange indeed if none of your colonies swarm. Besides this, calls will come from far and wide, summoning the beekeeper to come deal with swarms of unknown origin, clustered in unlikely places. Do not be afraid of bringing bee diseases back to your apiary with wild swarms. It rarely happens, in spite of a widespread superstition to the contrary. More than one person has suffered dreadful injury by climbing after a swarm, though it is almost never really necessary to climb at all. If you can get a comb of unsealed brood up into contact with a clustered swarm, then within an hour or so the bees will cluster upon that, and it can be lowered, swarm and all, to the safety of the ground. And if you keep on hand a few simple screened boxes, about the size of a hive body, you can keep stray swarms in these for several days at a time, in a cool place, then hive them at a time and place of your choosing. To get a swarm into such a box, you can dump it into a large funnel, thence through a hole in the side of the box. That is far easier and simpler than hiving them on the spot, then being obliged to move the hive later on.*

This spring looks to me like the year for swarms. The winter was mild all over the northeast, and all my friends tell me their bees came through in great shape. That means early spring buildup, strong colonies, and lots of swarms. I stopped off at one of my apiaries in mid-April, just to see how they had come through. I hadn't seen them since October. There are seventeen colonies there, and every one of them was roaring with life. Those colonies are only one and a half stories each; that is, a full-depth hive body plus a shallow super. That's what belongs to the bees the year 'round. That's the size hive to use for raising comb honey. That top half story is still pretty well filled with honey from last fall, so the bees will begin filling the comb honey supers right off, from the early flows. And that honey in the upper story

(Continued on page 355)

*From **Beekeepers' Record and Journal**, pub. by Linden Press, Interlaken, NY, 14847.

Research Review

Indemnity Payment Program Investigated

IN JUNE, 1979 the House of Representatives Appropriations Subcommittee on Agriculture, Rural Development and Related Agencies ordered a study of the beekeepers' indemnity program. A report on that investigation has just been released and is contained in a publication entitled **Hearings before a Subcommittee of the Committee on Appropriation, House of Representatives, Ninety-Sixth Congress, Second Session, Part II, Agricultural Programs**. The 68-page report starts on page 824.

In general terms the investigation is favorable to the beekeeping industry. The study was prompted by persons, both in the Congress and the Department of Agriculture, who were critical of the program. While many problems with the program were found, most of these were administrative aspects. It was observed that in some states there may have been a conflict of interest between beekeepers and those assessing the losses. One strong recommendation of the investigating group is that if the program is to continue there must be improved training of the field personnel who assess losses.

At this writing, the Department of Agriculture is threatening to discontinue the program. Comments have been invited from beekeepers. The future is not clear.

Documenting Penncap-M Losses

The use of Penncap-M, an insecticide made by the Pennwalt Corporation of Pennsylvania, is unquestionably a major threat to the beekeeping industry. Researchers have documented instances in which the active ingredient, methyl parathion, which is highly toxic to bees, has been found in pollen stored in hives many months after its application on crops. In one case it killed bees in their hives 19 months after the insecticide had been sprayed in the field.

Officials from the Pennwalt Company have steadfastly maintained that the problems caused by their product are fewer

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

than they were a year or two ago. Beekeepers know this is not true, but it is up to us to document what is taking place. There is no question that the label on the Penncap-M package states the dangers to bees, but we lack evidence of the extent of actual bee loss.

Diagnosing Penncap-M Kills

Penncap-M is classified as a "restricted use pesticide." This means it can be purchased only by licensed people and used on a limited number of specified crops. It will therefore be found only where there is commercial agriculture.

Penncap-M kills bees slowly. In this way it is similar to Sevin, which has also been plaguing the beekeeping industry. In both cases foraging bees live long enough to take several pollen-collecting trips to the field. Eventually, after many trips, the foragers begin to die. Inside the hive young bees engorge on pollen and honey soon after they first emerge as adults from their cells; it is at this time that they may encounter the contaminated pollen and be killed.

Therefore, in a normal hive affected adversely by Penncap-M or Sevin, one will find a mixture of old and young bees dead on the bottom board and in front of the hive. Kills from both insecticides look quite similar. However, Sevin does not remain toxic for such a long period of time in pollen in the hive.

Taking Samples

The best way to document Penncap-M kills is to collect pollen from cells in damaged colonies. The pollen should be that which appears to be freshest, usually in or immediately above the brood nest. One should collect about a teaspoonful, or the amount from 20 or more cells. The pollen should be put in a clean glass bottle or vial, labeled, and stored in a freezer until it is sent for analysis.

There appears to be little value in collecting and storing adult bees killed by Penncap-M. Once the insecticide is out of the capsules in which it is stored, the active ingredient breaks down rapidly, before it can be chemically identified by current techniques. It is important to call in ASCS (Agricultural Stabilization and Conservation Service) personnel to document the kill; this agency has an office for every county in the nation, listed in the white pages of local telephone directories. (At the time I am writing there is some question about the future of this program.)

Almost every state college has an individual on campus in charge of the use of chemicals and pesticides in that state. Many state colleges also have laboratories where analyses can be made to identify insecticide residues. These people are sometimes reluctant to become involved in bee losses but the seriousness of the problem is such that they should be pressured until they do so.

Apparently methyl parathion that remains in the Pennwalt capsules will not deteriorate for a long while, perhaps even years, especially when it is in a freezer. One should keep a sample frozen until he has a commitment that an analysis will be undertaken, then send it off for analysis.

New York State Survey

In New York, we will be undertaking an indepth survey of all honeybee-pesticide losses throughout the state during the 1980 season. Beekeepers in the state, even those with only one or a few colonies, who have losses from any insecticide should phone me (607-256-5443) and talk to me or one of my graduate students or my secretary, Mrs. Bower, to get instructions so that we can be precise in our documentation of losses.

Our Long-Range Goals

When the Congress founded the Environmental Protection Agency about ten years ago, it was made clear that people want fewer and safer pesticides. Methyl parathion is not a new insecticide; what is new is the way Pennwalt has packaged it in a nylon capsule. The capsule makes it safer for man to handle without reducing its insect-killing powers. However, no insecticide ever made contaminates the hive environment so severely as does Penncap-M.

(Continued on page 356)

Fundamentals for All

W. A. STEPHEN

A Tribute To "Steve"

By CHARLES B. FISHER
Vandalia, Ohio

THERE ARE MANY titles that could grace his name
As this wonderful man takes his leave,
However, none could be more fitting
As we affectionately call him "Steve".

His knowledge covered many fields
He gladly shared all that he knew
He related to all irregardless of class
His love of mankind, the thing to do.

In the course of events, there will be a void.
We must carry on, this is the key
We must look forward, not to the past
That's the way he would want it to be.

In our years on earth, are we moulding our lives
That will be recounted when we take our leave?
Will people hold us in as high esteem
And as affectionately as we do of "Steve"?

Questions and Answers

Q. I bought a copy in England of your excellent book ABC and XYZ of Bee Culture. I should be grateful if you would elucidate three points:

1. Is the ⅝ inch upper entrance the radius or diameter?

2. Why close this upper entrance with dried grass which will wilt, why not a cork? You state that in early summer the bees should use the full bottom entrance and the upper super pushed back ¼ inch. (At present here so many bees are coming and going that they need the full width opening on the bottom board.)

3. P. 204. At the beginning of the honey flow why do you recommend dividing the double brood chamber by putting all the sealed brood upstairs above an excluder and the unsealed brood downstairs with the queen? Unless it has great advantages, one is only disturbing the bees at a time when they least like it.

I am an amateur with five hives, three of them Midnite bees, and use the double brood chamber system in Langstroth hives all with full-depth chambers, producing extracted honey only. The climate here is mild (Atlantic coastal) with a few ground frosts in winter and an occasional air frost of -1° or -2°C. The annual rainfall is about 65 inches, of which 40-50 inches fall October to February. Citrus fruits grow quite well here; the plum trees start flowering at the end of February-early March, and there are various other garden trees and flowers until the end of July-middle of August. At the latter time we take the honey and fix the entrance reducers, and the hives are wintered outdoors. (It is curious that I have only once found a queen cell in 6 years.)

There are few modern hives around here; we live in the country in an area of very small farms and woods of eucalyptus and pine. Some of the small farmers have one or two circular cork hives of wild bees, and in the autumn they cut out some of the comb, which may contain brood, and squeeze the comb by hand into a bowl. These farmers say that many of their hives die from the sprays used on the vines, fruit trees and potatoes, but mine do not, so I think that it is more likely that they die from winter-spring starvation.
R.M. Spain

A. The ⅝ inch upper entrance is the measurement of the diameter. Your second question has to do with why dry grass is used to stuff the entrance. Corks will do very well provided they are removed at the proper time. Only one who is acquainted with your seasons can recommend the dates of the opening and closing of the supplementary (winter) entrances.

With regard to your third question, this manipulation of moving the brood upstairs above an excluder apparently is not necessary if swarming is not a problem. This is the principal reason for doing so.

★★★★★★

Q. I had a bad case of Nosema in my small apiary. I fumigated the equipment with acetic acid. To my dismay I found later that the metal parts of the queen excluders are covered with a thick layer of rust, with sharp edges. I cleaned it best I could, however I have doubts if the queen excluders can be used.

I have three questions to ask you.
1) If the spaces between the wires are wider now, too wide to contain the queen?
2) Has the smooth surface of the wires been destroyed, and if so, would the bees damage their wings while squeezing through?
3) Is this a usual occurrence that happened to my queen excluders? F.J. New Jersey

A.I was not aware that acetic acid would affect the metal parts of the queen excluders especially since the bees coat most everything with propolis but apparently this acid affects nearly all metal with which it comes in contact. We have a Root queen excluder test gauge which will be mailed to you for 50 cents if you order through our order department. This gauge will test the spaces between the wires of your queen excluder. It does not necessarily follow that the wings of the honeybee will be damaged in passing through the excluder although there may be some interference with the movement

during a heavy honey flow or the correct spacing may be altered allowing the queen to pass through. The use of acetic acid is not commonplace in fumigation, but where it is I am sure your experience will be a warning to other beekeepers.

★★★★★★

Q. I would like to know if when honey is sealed or capped over it continues to thicken if left on the hive. Sometimes when I extract honey that is capped over it is not as thick as it should be. C.B. Missouri

A. Even though a comb of honey is completely or nearly capped over it is not always of the hoped-for moisture content (thickness). This is usually due to gathering and storage during extremly wet seasons or possibly even absorbing moisture through the cappings while on the hive or during storage awaiting extraction. This usually happens during rainy periods of long duration, when the bees cannot protect it. To the opposite extreme honey stored during a dry season may be of good thickness (low moisture content) before it is capped over.

It may be possible to lower the moisture content of thin honey in the comb by storing the supers in a warm, dry room and the air circulated by a fan. Stagger the supers so the air can pass through the combs. A low volume of heat may be used in the room.

Thinner honey will usually bottle satisfactorily but as the moisture content increases, honey, especially unprocessed honey, will ferment much more readily. This can ruin the flavor of otherwise good table grade honey. When thin honeys are bottled it may cause the consumer to believe that it is diluted with an adulterant. If thin honeys are stored in bulk the grade may be lowered due to the growth of yeasts and resulting fermentation.

★★★★★★

Q. I am interested in setting up a few acres bee farm. What I mean is, what type of trees, flowers, shrubs and bushes would I use to start up with in the spring and furnish honey through the summer and fall? I would like to have something in bloom all the time for the bees to work.

How many hives would I use per acre? Do you have some kind of rule of thumb to work with? I would be interested in any information you have. L.E. Kentucky

A. You may plant a certain number of trees, shrubs and non-woody plants to supply a supplementary source of nectar for the bees but the greater part of your surplus honey crop must be gathered from the surrounding area. This would most likely be from the clover fields or the tracts of timber in your particular area whereas it may be from any number of wild or cultivated plants in other areas. The diameter of the foraging circle around an apiary may be several miles, much more area than is likely to be planted by the beekeeper. The number of hives of bees which you can place in a particular location is dependent more upon what forage exists in this total area rather than the amount of forage that the beekeeper grows. If your neighborhood offers good forage, perhaps supplemented with extra planting, the location may support up to 50 hives, usually much fewer, 20 to 25, and often a maximum of 10 to 12 when the apiary is a location short of blooming plants.

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Q. I have read of various ways to keep mice out of hives during winter, but this situation I have not seen described before.

There is some small creature (judging from the tracks in the snow) which removes all the fully propolized entrance reducers from each hive. I thought it was mice early in the winter and became discouraged to find the reducers continually missing. I couldn't nail them due to plastic bottom boards. The first warm day this spring I took on what I thought would be the unpleasant task of removing the mouse nests and cleaning some dead hives where the reducers had been out all winter. But, what was found was, surprisingly, clean bottom boards, strong, healthy hives and not a single mouse nest! This creature had apparently eaten only the dead bees and had taken the capping dust, ect. from the bottom boards and stored most of it in a pile under one of the hives. What was it? W.S. New York

A. The entrance reducers were undoubtedly removed by either a skunk or an opossum which was feeding on the recently dead bees. They also scratch on the hive front trying to catch live bees and in the process push the entrance reducer aside. The tracks which you saw in the snow were evidently mice which found the hive entrance large enough to enter and carry off the debris which had fallen on the bottom boards. Apparently the mice were unable to enter the combs since they were not found in the hive in the spring.

No doubt a moderate winter contributed to this series of events. Higher temperatures allowed the skunks and opossum to come out of their winter shelters periodically (they do not hibernate as does the groundhog, for example) but do retreat to their dens in a state of reduced activity during cold periods. Also, if the weather had been extremly cold you can be certain that the bees would be less active and the mice would take advantage of this and of course would be forced to take advantage of the protection of a beehive.

★★★★★★

Q. This winter I lost three hives and a fourth has dwindled to a handful, apparently from Nosema. I am now beginning a spring and fall program of Fumidil-B feeding. Is there any problem using the comb and supers from the deceased colonies on my other healthy hives? Is there any danger of transmitting Nosema to the other bees? If so, how can I clean or sterilize the comb and supers so as to save them? P.C. California

A. One of the most universal problems we find is the dilemma of how to return to use the fouled combs and hives of dead colonies, especially those which show signs suggesting a contamination by Nosema. The spores of the microsporidian causing Nosema as well as the spores of bacteria causing the foulbroods can be transmitted in this manner; housecleaning and nurse bees coming into contact with and ingesting the spores from fecal matter and honey left in the hives. Generally, any kind of sanitation measures are helpful. This would involve cleaning the equipment and installing new foundation in the frames. Interior parts of the hive such as the frames can be boiled in lye water* to clean them of the spore-carrying debris. Hives can be sterlized to protect against a re-infestation by Nosema by using acetic acid although this causes the metal parts of the hives to become pitted. High heat has also been used for this purpose. Ethylene oxide fumigation is very effective for both Nosema and AFB.

*Lye water is very corrosive to the skin. Use protective clothing when using it; especially protection for the eyes. Lye water in the recommended mix does not injure the wood or the metal, such as used in queen excluders and is a very effective cleaner. The hotter the cleaning mix the shorter the duration of the cleaning time. A strong solution of dishwashing detergent has also been recommended for this purpose.

★★★★★★

Q. I am interested in replacing brood combs with some type of plastic base

foundation. Do you have or know of research on bee acceptance and on durability of plastic foundation? In my fourteen months as a beekeeper and Gleanings subscriber I have only seen manufacturers' information on this foundation.

Also, do you have any data on successful bee operations using plastic hives and/or covers and bottom boards? I would judge this type of equipment might be more useful in mild winters not requiring as much insulation from the cold. Reader VA.

A. We are not at present aware of any research reports on the comparative merits of plastic based foundation and pure beeswax foundation. It would be difficult to evaluate and recommend one type over another even if test results were known since methods used by different beekeepers, local honey flow conditions and wide variation in the types of plastic used in the foundation may cause inconsistencies in the results obtained from using plastic foundation and comparing the two.

Plastic hives offer some advantages over wood hives. They do not usually require painting and some of the hard plastics are extremely durable. Hives of wood are more aesthetically pleasing to the beekeeper and perhaps more acceptable to bees although this does not seem to be a serious problem. Hives can be constructed of wood using hand tools or power tools in the home workshop and can be built by the commercial beekeeper.

Plastics used in beehives and foundation are usually of the type derived from petroleum-based processes, an increasingly costly and used raw material source whereas wood is a renewable resource. Most commercial beekeepers use wood for hives; it was cheaper when their hives were being purchased and could be used to construct hives in their workshops.

It must be borne in mind that plastic is an alien substance to bees; pure beeswax is likely to be given preference if bees are given free choice. On the other hand plastic lends itself well to the needs of the beekeeper; convenience in forming hive parts that have a long life if made of the better plastics. The insulating qualities of plastics, especially in the colder regions may need more testing to compare it with wood. Special plastics may need to be developed for this purpose. At the present time plastics formed with insulating qualities appear to lack durablility.

Once.honey is capped over in the hive it remains the same thinness, unless of course conditions occur as described above.

Notes From the Straw Skep

By BESS CLARKE
Canton, PA

I'M EXCITED ABOUT a honey cookbook which was given to me recently, titled "From Mama's Honey Jar Cookbook". It was written by Catherine P. Smith, and published by the Ideals Publishing Corporation in Milwaukee. My copy is one of the second printing so many of you undoubtedly have the book. Why didn't you share it before this?

The format is 8½ x 11 inch pages in paperback similiar to the other Ideals publications. The full page color photographs and other art work are outstanding. Best of all, most of the recipes are new to me. So many of the honey cookbooks are simply rehashings of the recipes I met first in the American Honey Institute's "Old Favorite Honey Recipes" many years ago. This collection is different. For example there are directions for making milk soup, pickled corn nuggets (with a picture that's terrific), barbecued fish, fried ripe tomatoes, and watermelon pie.

Over the years I have toyed with the idea of writing a book on cooking with honey, and last summer I even went so far as to begin working on it. I didn't get very far. There's an awful lot of work connected with writing a book. I simply couldn't get myself organized to the point where I could test all those recipes and list the ingredients exactly as I had used them. I can handle one or two concoctions a month along with the other stuff I write about but that seems to be my limit. You know that I really don't emphasize food in my column. Never let it be said that I'm a slave to the kitchen.

Perhaps that's why I'm so taken with this book. It is exactly the way I would like my book to be if I were to write one. My congratulations go to Catherine Smith and Ideals Publishing Corporation.

In her introduction, Ms. Smith says that for fragrance and sweetness you can't beat orange blossom honey. I think I must agree with her, although I have always maintained that buckwheat comb honey is tops on my list. On the other hand I still remember the taste of the sourwood honey I ate at the State 4-H Camp at Jackson's Mills, West Virginia 40 years ago.

We have been extracting our crop of orange honey as I write this (mid-April) and it certainly has a delightful aroma and flavor. I plan to save a couple gallons for our personal use. It's exceptionally good on fresh fruit.

I'll share two recipes from the book with you this month. I have received permission to do so. I made the barbecued fish first and it received mixed reviews. Bill is a devotee of Arthur Treacher's and I broke a promise not to cook any more fish when I tried this one. I thought it was delicious and ate the leftovers for lunch the next day.

Barbecued Fish: 1½ lbs. fish fillet, ⅓ cup vegetable oil, ½ cup diced onion, salt & pepper, 1 cup barbecue sauce, 2 tablespoons lemon juice, 1 tablespoon honey, 1 tablespoon Worcestershire sauce, ¼ cup water. Heat oil in frying pan. Fry onion until brown; remove from pan. Cut fillets into serving size pieces and fry until lightly

browned. Spread cooked onion over fish. Season with salt and pepper. Combine remaining ingredients and pour over fish. Cover and simmer about 10 minutes.

The other recipe is for Wheat Pretzels. Both the foods are illustrated in the book and they look so luscious I couldn't resist trying them. These are the soft pretzels familiar to all Philadelphians who buy them, all smeared with mustard, on the sidewalks of the city.

Wheat Pretzels: 2 cups all-purpose flour, 2 cups whole wheat flour, 1 pkg dry yeast, 1 teaspoon salt, 1½ cups warm water, 1 tablespoon honey, 3 tablespoons vegetable oil, coarse salt. Mix flour together. Mix 1½ cups of the combined flours with the yeast and salt. Stir the liquids into the dry ingredients and beat smooth. Add enough flour to make a stiff dough and knead until smooth. Divide dough into 12 pieces. Roll each into a rope 15 inches long and shape into a pretzel. Dip into coarse salt. Place on greased baking sheet. Bake in a 425°F. oven for 20 minutes, or until lightly browned.

You will note that no provision was made for letting the dough rise even one time, which seems strange when yeast was the leavening agent. However I followed directions exactly. My daughter-in-law says that they are just like the Philadelphia soft pretzels. Don't expect them to be crisp and shiny.

Honey Plants

Extrafloral Nectaries

By FRANCIS O. HOLMES
Henniker, NH

BEEKEEPERS USUALLY think of extrafloral nectaries as odd and unusual, but they probably are commoner than we realize. We already know them in a list of plant genera that runs pretty much from A to Z. They have been reported in Acacia, Andropogon, Cassia, Catalpa, Coronilla, Gossypium, Jasminum, Paritium, Prunus, Pseudotsuga, Pteridium, Pyrus, Quercus, Ricinus, Salix, Vicia, Vigna, and Zea. They probably occur in many more genera also.

In the genus Acacia, the plant known as Black Brush (*Acacia amentacea*) is reported to possess extrafloral nectaries (Pellett, **American Honey Plants**, 1930, Page 15).

One grass, *Andropogon gayanus* var. *bisquamulatus*, has extrafloral nectaries but no floral nectaries. The extrafloral nectaries are located between the leaf sheath and the pseudopetiole, and also on pseudopetiolar ridges adjacent to the ligule (Bot. J. Linn Soc. 64:77-80. 1971). The sugars in the nectar from these extrafloral nectaries have been found to be sucrose, glucose, and fructose, together with small amounts of maltose, raffinose, arabinose, xylose and three unidentified sugars (Phytochemistry 9:2315-2318. 1970).

Cassia fasciculate Michx. the Partridge Pea, secretes nectar from extrafloral nectaries (Lovell, 1966, **Honey Plants Manual**, page 33). The nectar is said to be secreted from a large cup-shaped gland on the upper surface of the petiole of each leaf. This is true also in the case of *Cassia chamaecrista*. Both species are said to have nectar-less flowers.

Catalpa speciosa and *Catalpa bignonioides* both have extrafloral nectaries on the under sides of their leaves, in the angles formed by side veins as they meet the mid vein. Secretion of nectar from the extrafloral nectaries continues for some time after the flow from floral nectaries of the same plants.

Cotton, *Gossypium hirsutum*, produces both floral and extrafloral nectar. Honeybees sometimes find the extrafloral nectar more to their liking and neglect the floral nectaries.

Jasmine (*Jasminum*) flowers attract bees to some extent, but bees draw nectar even more eagerly from the base of the flower after the petals fall.

Paritium tiliascium, the hau tree, has only extrafloral nectaries. They are on the leaf veins near the stem and also on the outside of the floral calyx (Pellett, **American Honey Plants**, page 154. 1930).

In the genus *Prunus*, the laurel cherry (*Prunus laurocerasus*) has extrafloral nectaries on the underside of each leaf, in the angles where side veins meet the mid vein. Peach (*Prunus persica* Sieb. and Zucc.) is also reported to possess extrafloral nectaries.

Douglas fir (*Pseudotsuga taxifolia*) secretes no nectar, but honeybees collect the sugar meleziose that forms white masses at leaf tips (Pellett, 1930, **American Honey Plants**, page 121) and at the ends of branchlets (**Gleanings in Bee Culture** 105:98. 1977).

The commom bracken fern, *Pteridium aquilinum* (L.) Kuhn, has nectaries at stem junctions, where each pinna joins the rachis (**Floral Biology**, by M.S. Percival, 1965, page 81). Its nectar is said to attract ants but not honeybees.

Apple trees have been reported to produce nectar on their flower buds (Deutsche Bienenw. 17:122).

Pellett (in **American Honey Plants**, 1930, page 251) records extrafloral nectaries in the post oak, *Quercus minor*. Where these nectaries are located is not specified.

The castor-oil plant (*Ricinus communis* L.) is said to have extrafloral nectaries on stem, leaf stalks, and leaf margins (Pellett, 1930, **American Honey Plants**, pages 80-81).

Salix eleagnos Scop. is a willow that is reported to have extrafloral nectaries on the edges of its leaves (Ost. bot. Z. 117:205-222. 1969). Ants are said to be attracted, but honeybees are not.

The Broad Bean, *Vicia faba* L., possesses extrafloral nectaries on the undersides of leaflike parts of leaf bases. (U.S. Agriculture Handbook 496, page 116. 1976).

Cowpea, *Vigna sinensis*, yields mostly extrafloral nectar (Pellett, 1930, **American Honey Plants**, page 108).

Indian maize, *Zea Mays* L., has been reported as secreting nectar from a smooth gland, or plate, in each leaf axil (Pellett, **American Honey Plants**, page 176. 1930). This report still needs confirmation, to ensure that the early records were not in error. Obviously, honeybees working in the leaf axils might be collecting water droplets or honeydew from aphids instead of plant nectar.

Leslie Little of Shelbyville, Tennessee

Fifty Years With The Bees

By JOSEPH O. MOFFETT*
Cushing, Oklahoma

LESLIE LITTLE (1906) has worked with the bees for 55 years. In April, 1923 he started working for John M. Davis, a commercial queen breeder, at Spring Hill, Tennessee. In 1930, Davis quit selling queens and Leslie went to work for E.I. Dupont Co. at Old Hickory, Tennessee. Meanwhile, Leslie kept bees and was selling queens as a sideline. In 1939, Little moved back to his home town, Shelbyville, and started to raise queens and produce honey. In 1947, Leslie purchased more bees and started producing and shipping package bees. In 1948 the Littles bought more bees and started commercial honey production with 900 colonies.

The Leslie Littles are setting in the lobby of the Sheraton Harbor Island Hotel during the 1979 American Beekeeping Federation Convention held Jan. 15-20 at San Diego, California.

In 1949, Leslie was appointed state apiarist for Tennessee, a position he held until he retired in 1972. Little sold 400 of his colonies after becoming state apiarist because his work with the Tennessee Department of Agriculture required so much time.

In 1974, Leslie sold his commercial queen business to Edwin Holcombe of Shelbyville. However, Little still runs

Little's Honeyland was built by the Littles in 1951 and operated by Mrs. Leslie (Bernice) Little after her retirement from Southern Bell Telephone Company. The store featured honey, honey candies, honey ice cream, and other honey products.

about 100 colonies and sells between 300 and 400 breeder queens a year to commercial queen breeders for $25.00 apiece. He also is a bee supply dealer, manufactures some bee equipment, and packs about 15 to 20 tons a year with a Pac-King.

Leslie has been active in promoting royal jelly and is Vice President of the Royal Jelly Research Foundation. For two years, he produced a pound of royal jelly a day. Leslie also invented a suction pump and trap to remove the royal jelly from the queen cells.

He has been active in state and national associations for many years. Offices held include president of the Tennessee Beekeepers' Association and Southern States Beekeeping Association, and nine years on the executive committee of the American Beekeeping Federation.

Leslie was the American Bee Breeders Association representative on the Honey Industry Council of America from 1953-1961. He also was the first secretary-treasurer of this organization, a position he has held both from 1953 to 1961 and again from 1966 to date (1979).

Leslie and his wife, Bernice, have been and are still very active in the state and national honey queen programs. The Littles have sponsored almost all of the 21 Tennessee Honey Queens who have competed for the national title. Three of these queens have been selected to be American Honey Queens. The Littles are probably the only couple still active in the honey queen program who also helped initiate the American Honey Queen program in 1959.

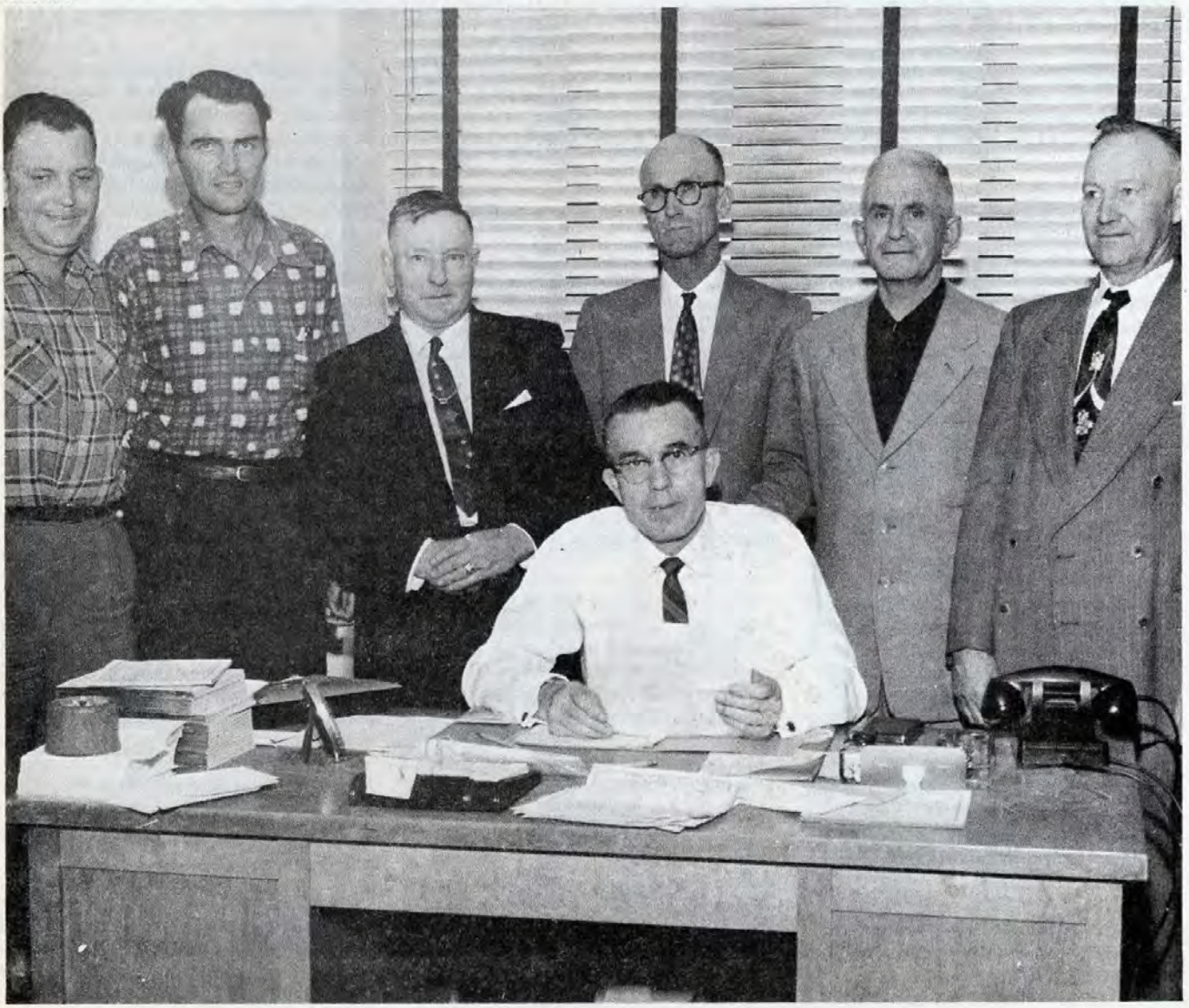
Little has written nine editions of **A Bee Book For Beginners**. He also teaches a beekeeping course for credit at Middle Tennessee State University at Murfreesboro.

Little is a charter member of the Shelbyville Civitan Club, was its first president, and was elected president for the second time in 1979. He also is music minister for the First Baptist Church.

The revised ninth edition of Leslie's bee book was published in late March, 1980. The previous eight editions of 10,000 copies each are completely sold out.

* Slightly updated from **Some Beekeepers and Associates**, pp. 63-64. Moffett Publishing Co. 1979.

Leslie Little (seated) is shown with some of his apiary inspectors before he retired in 1972 as Chief Apiary Inspector for the State of Tennessee. The inspectors are (left to right) Roy D. Brown, Carl Teasley, James R. Williams, John Bean, W. R. Cundiff, and E. E. Griffin.



Second International Conference On Apiculture In Tropical Climates

By D. B. MAHINDRE
Karan Nagar (Srinagar) Kashmir, India

THE SECOND International Conference on Apiculture In Tropical Climates, sponsored jointly by the Indian Council of Agriculture Research, All India Khadi and Village Industries Commission, Department of Science and Technology, Indian National Science Academy and International Bee Research Association was held at New Delhi, India from the 29th of February, 1980 to the 4th of March, 1980. A pre-conference symposium at the Central Bee Research Institute, Pune, from the 25th of February to the 27th of February and a post-conference symposium at Habbal, Bangalore on the 10th and 11th of March, 1980 completed an eventful two weeks of conferences.

The conference was inaugurated by the Food and Agriculture Minister, Government of India, Sri Rao Birendra Singh. The Post and Telegraph Department released a special commemorative stamp on the occasion.

Dr. Swaminathan, Chairman of the International Bee Research Association and Food and Agriculture Secretary, Government of India, while addressing the inaugural session of the conference pointed out that coffee plants in plantations buzzing with bees had 83% more seed than those with no bees around. Citing the results of research in beekeeping in India he said that the recent research has shown that the presence of bees in orchards and plantations increased pollination to such an extent that the yield of onions went up by 150% and sunflower seeds by 100%. An oil seed plant grown in tribal areas has doubled its yield after the bee colonies were introduced in those areas. He pleaded that the scientists and the Village Development Agencies should combine farming practices with beekeeping. Bees could not only supplement the income of the poor but also add to the nutritional value of their food.

Delivering the keynote address, Dr. Deodikar, prominent in Apiculture science said , "While insecticides might reduce harmful insects it can also often destroy several beneficial insect species, including honeybees. This defeats the very purpose of getting potential yield increases from cross pollination of crops. There should be some legal control of the irrational and indiscriminate use of insecticides on farms." He further pointed out that India still did not have any legislation on bees and beekeeping. There is only a code of conduct formulated by the Central Bee Research Institute. The Indian Standard Institute has accepted the code as a national substitute, pending formal bee legislation. The scope of the code was naturally educational and was persuasive, not obligatory. Dr. Deodikar stated that approved legislation was therefore overdue.

Over 200 delegates attended the conference. Among those were 59 delegates from 22 different countries, over 150 from India. Papers submitted earliar by the scientists were read and discussed. The papers were on the following subjects: Beekeeping in tropical climates (21); bee morphology, biometrics, genetics and breeding (including introduction and utilization of exotic bees (11); bee physiology and biochemistry, including behavior (14); bee pathology and toxicology (7) apiculture and tropical agriculture, including bee botany (21); bee products, marketing and control (8).

Dr. Koeniger and Dr. C. Reddy read their papers on *Apis dorsata*. Dr. Koeniger is of the opinion that *Apis dorsata* should be harnessed in the rural areas for honey collection by adapting improved methods. This will give an extra income to the villagers without setting up an apiary, the initial stage. This will stop the burning of bees for honey collection by the hands of villagers and provide more bee wealth for crop pollination.

Professor C. F. Townsend, Ex Chairman, International Bee Research Association, in his address on the concluding day, the 4th of March, said, "The developing countries are to create jobs, as many as possible. How can we create that?" he asked. "Land is not enough and it is limited. Small operators are, every day, being thrown out due to competition and so they find their way to the cities in search of jobs. The advantage of the improved techniques is exploited by certain groups because of their influence and the resources at their disposal. Thus, food production goes to the large producer who exports it to get more petrol and diesel fuel. This needs to be prohibited.

"In Columbia, within the last ten years, people have made good progress in beekeeping. People expanded the coffee business and beekeeping. Mexico developed ten-fold, in the past ten years, the growing of tomatoes for the United States.

"There is a great difference in city and rural life in India. In the villages people are accustomed to self-help, demonstrate self-reliance and are labor intensive." He pointed out that we need more protein in our diets. Due to deficiencies in diet, poor and landless laborers are suffering. The liabilities of the poor are their children and for that family planning is being introduced. The green revolution has been a help only to the middle class. He pointed out that beekeeping is one way to solve some of these problems of food production and distribution so it is necessary to push it to the level where it is universal.

It is the nectar and pollen of the flowers which are going to waste. Without the bees the production of honey is lost. If beekeeping is adapted to all of the rural areas more avenues of income can be provided. Some of the best beekeeping can be done in the dry land zones of the world. Honey has a great demand on the world market. It is a non-perishable product and can be preserved for a long time by taking proper care.

In Africa four bee colonies provide for one families needs. It was further pointed out by Prof. Townsend that the problems of beekeeping in developing countries are different than those of the developed na-

tions. Absconding bees, swarming, pollination, training personnel and combining honey collection and marketing are problems common to developing nations.

Honeybees are to be introduced in the development programs of the countries of Asia, Africa and in the central zone of America. Professor Townsend pointed out that the methods of the Western countries are no doubt good but not very good for the developing countries; so they fail at this stage of application. The approach must be changed. He pointed out that in the next ten years Mexico and other countries will produce more honey as the cost of labor and material is increasing in other countries.

Professor Townsend stressed the importance of a forestry program; to plant the right type of trees. He mentioned that such trees survive on less than 10 inches of rain a year, provide good firewood, nectar to bees, green fodder to animals and timber for building purposes. He pointed out that in ancient days Lord Budda said "Every man should plant at least one tree in his life and should look after it till it is grown". Such tree plantations will help beekeeping and serve the people in the rural areas. Prof. Townsend expressed satisfaction over the success of the first Tropical Beekeeping Conference and said further higher educational courses, having international recognition should be at the Central Bee Research Institute. Pune, India and the other in Nairobi (Africa-Kenya). These training centers should be brought up to the International level of training standards, well equipped with a qualified staff and modern equipment and thereby gain international acceptance.

On the 4th of March, 1980, the concluding day of the conference at Delhi, there was a meeting of the plenary session presided over by Dr. Swaminathan, Chairman of The International Bee Research Association. Over 20 resolutions were passed for the development of apiculture in tropical countries.

Dr. Eva Crane, Director of The International Bee Research Association expressed her gratitude for the meeting arrangements and announced the holding of a Third International Conference on Apiculture in Tropical Climates at Nairobi, Kenya, Africa in August, 1984.

Gleanings Mail Box

Dear Editor:

Spring is here in southern New Hampshire and my purple willows are humming with honeybees.

I am getting letters from many beekeepers who are interested in providing their honeybees with better sources of nectar throughout the spring, summer, and autumn. This army of observant beekeepers may eventually bring to light variants of wild nectar plants that will differ from the wild populations just as today's carrots differ from Queen Anne's Lace, and as today's sugar canes differ from their wild ancestors. We may someday see "nectar farms" planted by beekeepers with cultivated and distinctively improved lines of our native and introduced nectar sources. We are still in the primitive stages of letting the honeybees seek out nectar plants from Nature's bounty, instead of developing named varieties of nectar plants characterized by unusual attractiveness to honeybees and unusual productivity for the support of honeybee colonies.

Francis O. Holmes
Flanders Road
Henniker, NH

Dear Editor:

Just a short response to Mr. Hathcock's heartless statement in the April Issue of **Gleanings** concerning his disinterest in obituaries of persons unknown. I take it that either Mr. Hathcock has no bees of his own or he has not learned much from the ones he does have. Their communal living, their working together and interest and concern for their fellow bees are the first lesson we learn from the honeybee.

We have been associated with the beekeeping and honey packing industry for 34 years and have made many close friends on county, state and national levels. We have found that in general the beekeepers are a very close knit group and have quite an interest and concern for each other.

To publish an obituary is to pay our last respects to one who has had a mutual interest in one of God's miracles, the honeybee. Whether or not I know the person, please continue to publish the obituaries. I CARE!

Luella M. Gamber
Lancaster, PA

Dear Editor:

Let me suggest that **Gleanings** does all of us a service by annually printing in the April issue a Who's Who in Apiculture. If someone wishes to move bees into another state they should first write to the apiary inspector whose name is listed in the Who's Who. Ask him the questions. He can tell you whether or not you can move bees in and under what conditions. Furthermore the apiary inspector covers the whole state and generally has a good idea of the honey crops. Many states are large and probably no one knows more about beekeeping in specific areas in a state than the apiary inspector except in possibly a few states that have extension apiculturists

Trusting you will continue the Who's Who. It's an exceptionally useful effort on your part.

P.F. (Roy) Thurber
Kirkland, Washington

(We hope to improve in our efforts to get accurate information from every state and province. We mail inquiries to the State Association Secretary. Sometimes there is a change in the office of the Secretary and our letter fails to reach the new Secretary or the information does not reach us in time to make the changes from the previous Who's Who for the April issue. Editor)

Book Review

The Complete Guide To Beekeeping, by Roger Morse, 224 pages, including index, paperback, $5.95. E.P. Dutton, 2 Park Ave., New York, NY 10016: Clarke Irwin and Co. Ltd. in Toronto and Vancouver.

This is a revision of Dr. Morse's original **The Complete Guide to Beekeeping.** This is a paperback which includes an additional Chapter XIV on honey wine making. Honey wine, mead or metheglin is made with honey and was probably man's first attempt at brewing an alcoholic beverage. History reveals that the Egyptians, Greeks and Romans made honey wine.

The revised edition of **The Complete Guide to Beekeeping** has a publication date of May 21, 1980.

Beekeeping In The U.K.

By KEN STEVENS
Devon, England

Hives in a Kentish orchard.

THE BEE FARMERS of Great Britain used to be called the Honey Producers Association. What's in a name; could it be any reflection on what they produce? Judged by American standards it does seem to be a bit of a struggle trying to make apiculture pay. This is not a moan, in fact our beekeepers are embarassingly keen. Although there are half-a-dozen different hives in use already, after a couple of seasons newcomers either want to modify their hive or to design yet another sort!

Then there is the weather. No one need be short of conversation here, even first thing in the morning. Although the Great Lakes cover a larger area than the whole of these islands the weather is unbelievably variable and unpredictable. Each year seems to come up with some freak occurrence. Gales, drought, floods, unusually high or low temperatures, all seem to crop up at irregular intervals. Last winter was disastrous; many beekeepers losing more than half their colonies. This was followed by one of the worst springs living beekeepers have experienced. Flows can occur any time from April to September but bees had to be fed to keep them alive, right into July. Stocks taken to the moors for the heather flow deteriorated for the first three weeks.

Yet once in a while colonies reach their peak just when there's a heavy flow and a bumper crop results. Our bumper crop being anything over seventy pounds. The on-off nature of our season causes swarming problems. Most beekeepers go through the brood nest at least every ten days, it is rare for the weight of supers to discourage this. How lovely to read in **Gleanings** about honey rolling in from acres of clover, buckwheat or some exotic plant.

Comparing the number of hives with the total population figures, we only have one hive for every 240 persons. The figure for the USA is nearly ten times higher. Most hives are kept in or near towns. Hives have been successful on roofs in the middle of London though there is some resistance to bees in the close-packed suburbs. Neither the Forestry Commission nor the Water Board seem all that happy at making apiaries available and will charge the equivalent of one tenth of the honey crop for doing so.

Cheaper sugar is supposed to be available from the European market but the British Government insists that it should be de-natured at the beekeeper's expense. No one seems keen to get foul-tasting sugar at a penny or two less per pound. Some have memories of the "green-colored" honey that resulted last time denaturing was done with a dye plus a ghastly, bitter component.

Ken Stevens, the author, enjoying himself at a meeting of beekeepers.

Talking of costs, although income here is on the average well below that of American beekeepers, lumber, beeswax and gasoline are all twice the U.S. prices! Honey sells at $2.00 a pound but crops only average 30 lbs. so fat profits are hardly the order of the day.

Managing bees is so much more straight forward when the season develops steadily, (which it rarely does here). Plans can be made and carried out so that enough new queens are reared. The Snelgrove board is used by those who, like me, enjoy fiddling with their bees. These assist in the rearing of replacement queens and yet retain the honey gathering potential of the stock. It is not easy to rear enough queens to be selective and the earliest mated and tested come too late for that year's honey production. On the other hand imported

queens cost $16.00 and the Varroa scare has certainly made people shy of buying from abroad.

Although our total foraging area is relatively small, we have a wide range of flora, honey crops coming from fruit, clover, blackberry, brassicas, field beans, heath and heather. Ivy often gives a late flow in the south but its honey tends to granulate even inside the bee. Apiaries just a short distance away from one another often show marked differences in their honey. We go more by flavor than color and many people show preference for the darker honeys. One association invited members to place jars of honey on a map of the district so that color variations could be compared — it proved most interesting. Soil seems to have quite an influence on color.

We have spray problems, though growers are in the main, very responsible. It is however, extremely difficult to get help to claim compensation when damage is done so recompense is unusual. Migratory beekeeping is practiced by bee farmers and quite a few hobbyists. Thousands of colonies are taken into the fruit growing area of Kent each year and $25 per hive is well-earned for the efforts involved. Agricultural crops like clover, field beans and oilseed rape also call for the hire of colonies. In the late summer hundreds of apiaries spring up on the heather, though equally large areas blossom without the visit of a single bee.

A few Langstroths are used here but a brood chamber of three deeps such as one reads about in the States would not only be rare but fantastic. My beekeeping is done entirely on Langstroth shallows (5¾"). I use two boxes for wintering and give a third occasionally for brood if the season is good and a queen extra prolific.

One way of trying to get bees to pay their way here is to utilize every possible advantage. This involves giving a pollination service, moving bees to the best crops and making the most of all hive products. Honey is sold as cut-comb, clear, natural set and creamed and multiple packs of different honeys sell well. Pollen could be marketed but some of our best friends become our worst enemies when propaganda to the public is involved. For a time Denmark wanted our propolis but now seems sated. One or two folks are selling bee venom, but the biggest turnover comes from thinking of ingenious ways to overcome sales resistance to high honey prices and to exploit every conceivable aspect of mead, vinegar and beeswax products.

Candles, cold cream, polishes and the use of wax for carpentry, lubrication, water-proofing etc. all offer better returns for beeswax than re-cycling it into foundation, which after all is most efficiently rolled and wired in the factories.

Nevertheless, keeping bees is a healthy occupation and the fact that they often have to endure hard times, possibly makes their owners think even more highly of them. Certainly we love to read, write and talk about bees and unless there's an observation hive to be studied with fascination, itchy fingers pull combs apart marvelling at the festooned chains of bees, perhaps the balling of a queen, the various stages of brood, ripening nectar partitioned by the white extensions to the cells, the sounds, the smells, you know what I mean — we'd go on keeping them even if beeswax was their only product.

Beekeeping Problems Defined

THE FOLLOWING was prepared by Roger A. Morse, Professor of Apiculture and in charge of the teaching, research and extension in beekeeping at Cornell University, Ithaca, NY, for the Senate and the House Appropriations Subcommittees on Agriculture.

Two problems plague the beekeeping industry and threaten our ability to supply the pollinating insects needed for a healthy agriculture. These are (1) the use of **pesticides** which kill bees and (2) the actions of a small number of persons who **adulterate honey** and thereby undermine the market.

Our long-range goal in research with economically important insects is the development of integrated pest management programs which feature the use of fewer and safer chemicals. Many people in public and private organizations are working in this direction. Sometimes innovation backfires.

For example, the Pennwalt Corporation of Pennsylvania discovered they could put a highly toxic chemical insecticide, methyl parathion, in a nylon capsule, and make it much safer for man to handle. The product, Penncap-M, is effective against various pest species. However, under certain conditions it retains its toxicity in the environment and may kill beneficial insects over a long period of time.

When it settles on flowers Penncap-M is collected by honeybees, returned to the hive and stored in pollen. In one instance it remained in stored combs and killed bees 19 months later. In another instance it remained in combs in storage and killed bees 13½ to 14½ months later in Idaho. This past summer in New York State this insecticide was sprayed on sweet corn, which was shedding pollen collected by bees. We found it active in the stored pollen, and killing bees three, and again, five months later; we will be taking more samples in a few weeks. About 1500 colonies of bees are involved in this case alone.

Because of problems with pollinating insects, the Environmental Protection Agency placed Penncap-M in a special category in March, 1979, calling it a "restricted use pesticide". We expect this will limit problems but it has not prevented losses like the one in New York State this last fall.

Indemnification legislation passed by congress in 1971, and continuing research on integrated pest management systems, are the only safeguards that beekeepers have against pesticides.

As regards the second problem, honey adulteration, I think it is understood that purity in our food and honesty in labeling is a right every American has come to expect. At present few unscrupulous people are adulterating honey with cheaper sugars. This cheats the public and undermines their confidence in our product. Several states have undertaken successful prosecutions but the Pure Food and Drug Adminstration has yet to act.

In brief, I urge this committee to continue to fund the indemnification program for beekeepers; it is serving a just and worthy cause. I urge that programs designed to find better ways to protect crops against insects be encouraged. The actions of the Environmental Protection Agency to curtail those pesticides which contaminate the environment likewise need your continued support. Lastly, I request that the Pure Food and Drug Administration be asked to take appropriate steps to curtail the adulteration of honey.

Reading Is Believing

By JOHN WHEATLEY
Brockton, MA

I READ WITH interest the article entitled "Demaree Plan Made Easy" (**Gleanings**, April 1979, p. 182) by Wesley H. Dunham of N.J. In the article Dunham wrote of an easy method of locating the queen during the process of Demareeing and cited the plan as a good swarm control technique and honey producer. He ended by writing"... and you should see how they pile in the honey. After all, honey is the name of the game." I was intrigued. Dunham is from N.J., with a climate roughly similar to that of eastern Mass., and I had been seeking a way to determine whether my colonies were working at full capacity. Also, in the course of my reading about bees in the four years that I've worked with them (purely a hobby), I have seen numerous photos of multi-level deep supered hives, and wondered how one goes about creating such behemoths. I assumed that one could only be created in the deep South with its continual warm weather. The fact that a real person "up north" had been recently successful spurred me on to give it a try.

Our spring got off to a rough start — much rain, snow on April 9, (the day after, approximately 400 packages arrived from Georgia). I can imagine what the bees were saying!

I decided to work with one hive that had wintered over, and, if it was successful, with others next year. I realized that one problem would be the need for three more deep supers per hive and an extra queen excluder. Because it is impossible to calculate the number of new swarms that will be available (usually between May 20 and June 1), it's hard to know how much equipment must be kept ready.

April 29, 1979 I took the first step, reversed levels A and B and transferred two frames of brood and bees from B (replaced with two drawn-out frames of comb) to level C. I included in level C a frame of honey (bees attached) and seven other frames of drawn comb. In the D. level I put a feeder jar. (Not my best day — I dropped the first gallon feeder jar full of sugar water on the concrete block supporting the hive. It broke and soaked my shoes and pants. I tried to be philosophical and think of it as "christening the new hive" — it didn't work! I turned the air blue for about two minutes and then went back to work.) Before I added level C, A and B were both full of bees (April 29) and otherwise would have been prime candidates for swarming in two to three weeks.

> "I have seen numerous photos of multi-level deep supered hives, and wondered how one goes about creating such behemoths."

May 7 — I put queen excluders between levels A and B and B and C. At this point all three levels appeared full of bees. My dates did not coincide exactly with the article dates. For one thing I read the article late in April, and for another, the weather and my regular work did not make every day available to deal with the bees.

May 18 — Had been waiting for a good day (since May 15); decided I could wait no longer and took all levels, A, B and C apart and set them on the ground — no eggs in A and B, but there were some in C. I put C on the bottom board and then proceeded to shake all but two of its frames free of bees and substituted empty frames. The eight frames that I took from C were put into box E (with two other frames). On top of C I put box D (empty frames), then a queen excluder, then B and A, then a queen excluder then box E, and I closed it up. Worse than a corporate reorganization! (I also had cut out queen cells on frames in box E.) The bees were ugly, but I can't blame them. If I had been living with my family in a second-floor apartment and the landlord said I'd have to move everything to a first floor apartment, and, just as I'd settled in on the ground floor, he said I'd now have to move to a fifth-floor apartment, I'd be ugly, too!

May 20 — Examined levels 3 and 4 (supers A and B) for queen cells and found three open cells at the middle of the frames (assumingly supersedure cells) and saw at least one virgin queen. I could not figure out whether the queen was extra or not and did not want to pull the hive apart to find out who was running the show. I left her.

At this point I heard that my fellow beekeepers were filling shallows. I realized that they were working with two deep levels boiling with bees, and although they got early honey, they ran the risk of swarming. I, on the other hand, was preparing for the later honey and, if the summer were bad, I had gambled and lost. (Even getting up in the morning is a gamble.)

May 28 — I removed the upper queen excluder (by this time I was really off the Dunham schedule) and found a queen in super B, but no eggs, also two supersedure cells. Stumped, I crossed my fingers and put the top back on. (This problem somehow resolved itself.)

May 31 — Put a shallow super (level 6) on the hive and decided to leave the five deep supers alone for the summer.

July 15 — Examined the shallow super — not a drop.

October 5 — Examined it again — still nothing. the bees were extremely ugly. I removed the shallow.

October 14 — SUCCESS! I took the hive apart and levels 3, 4 and 5 were full of honey (120 plus pounds). I took level 5 for myself and left levels 3 and 4 for the bees.

October 21 — I removed the excluder (between levels 1 and 2) so that the queen could move with the cluster and closed up the hive. I decided not to try to thank each bee individually.

My veil's off to Wesley Dunham for explaining his method, and to **Gleanings** for reporting it. I sold some of the honey and made enough money to resubscribe.

Colored Glass Bees

PROFESSOR WILLIAM HOUSEHOLDER of Eastern Kentucky University at Richmond, KY makes colored glass bees as a hobby and sells them to beekeepers that order them. They are colored and are 10½" by 12¼" in size. His address is 121 Westwood Drive, Richmond, KY 40475.

Beekeeping In Romania

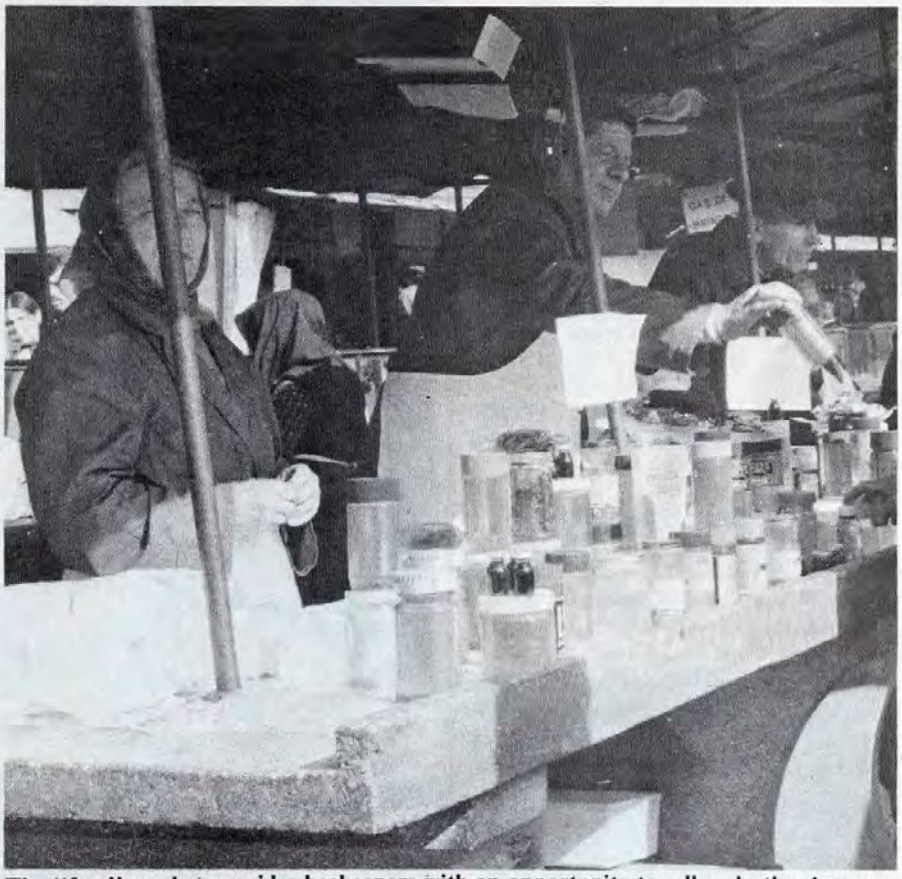
By CONNIE KROCHMAL
Asheville, NC

DURING A RECENT visit to Romania it was fascinating to observe the large-scale program for beekeeping and honey production, as well as the manufacture of bee by-products.

Individuals may, and many do, keep small apiaries, producing honey for their own needs and selling the surplus on the open market. Larger producers have formed a co-operative, the Bee Growers of Romania, and market their large scale production through a co-operative, Apicol, located in Bucharest, the capital.

I visited Apicol, and was amazed to find, in a communist country, highly developed vertical programming. At Apicol there are several divisions. One produces hives from local woods; another produces honey wine and vinegar; a third manufactures cookies and cakes; a fourth produces a variety of bee products from honey to mouth wash.

There are several research laboratories in the factory, one staffed by veterinarians studying new ways of combatting bee diseases. Another staffed by pharmacists, all of whom were women, doing research on the products and by-products from the hive. In Bucharest itself I visited a medical clinic where eight physicians and one dentist were practicing healing in conventional terms, but supplementing their treatments with honey products, propolis and other related materials.



The "free" market provides beekeepers with an opportunity to sell and other bee products at whatever price they can get. These markets are free of government control.

Apimondia is a world-wide association in Bucharest, Romania, focusing on encouraging studies of increased uses of honey and bee products. This sign marks world headquarters.

I was given several jars of honey which I brought home and ate, and found to be of excellent quality, as well as a variety of honey products. The bee growers association even markets ties with bees and hives painted on them, and my husband now wears one.

The bee products are marketed through the equivalent of retail stores all over the country. In a very practical method, the stores also market bee products for the apiarists, and are the collecting points for the honey as well.

During the growing season thousands of hives are sent out to farming areas to serve as pollinators.

Romanian Honey Therapies

(Continued on page 355)

Brookings Aerial Sprayer Honored By Beekeepers

GARY EGEBERG has received the aerial sprayer of the year award from the South Dakota Beekeepers' Association.

Egeberg was cited for his care to protect honeybees while he sprays crops for other insects.

Richard L. Adee, owner of Adee Honey Farms, Bruce, ND, nominated Egeberg for the award.

Adee had this to say about Egeberg:

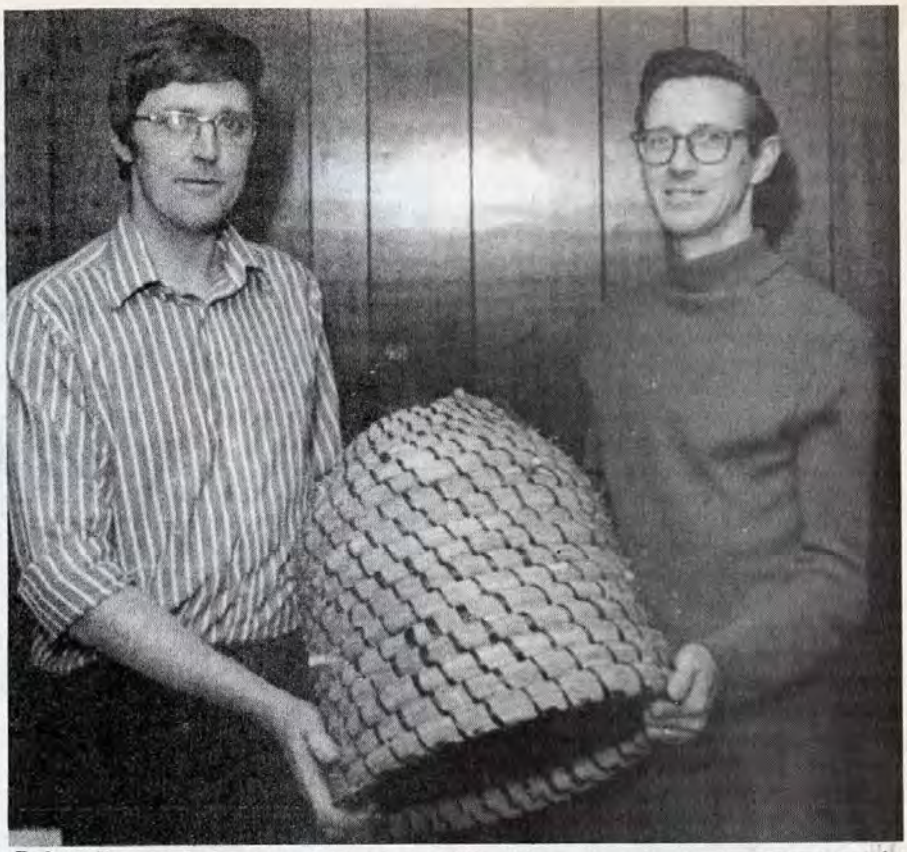
"Gary's knowledge of the value of the honeybee to the farmer is demonstrated by the actions he has taken to protect them. He owns two airplanes for spraying, a large plane and a small plane. He uses the larger plane on big open fields and the smaller plane on small fields which might be a little tight to get into. By using the right sized plane for the job, he can put the pesticide down on the target crop thereby avoiding the hazard of drift to honeybee apiaries or to untargeted crops which honeybees may be working.

"Whenever a crop has to be sprayed which bees are actively pollinating, such as sunflowers, Gary has made it a point to do it in the evening after the bees have quit foraging or early morning before they start foraging. He has equipped one of his planes with night lights so that he can spray after dark if necessary to protect the bees.

"Gary is very familiar with the chemicals he is using and their toxicity to the honeybees. He uses chemcials which will kill the target insect, yet do the least amount of damage to the honeybees. His philosphy is that it is not good enough to just kill the harmful insects, for the farmers' benefit he must also protect the honeybees which are his source of pollination.

"Gary carries in the cockpit of his plane county maps showing locations of all our bee colonies. In all the spraying he has done in Brookings and surrounding counties we have not lost a single bee."

Egeberg runs Egeberg Aerial Spraying headquartered at the **Brookings** Municipal Airport.



Robert Young, Left, showed members of the Alamo Area Beekeepers how to make skeps.

Skep Making Demonstration

ROBERT C. YOUNG, Assistant Editor of the Bee Craft magazine in England showed members of the Alamo Area Beekeepers Association of Texas how to make the old-fashioned straw skeps like the one they are holding in the picture. Robert Young teaches school in Sittingbourne, Kent, England and is also what we refer to as an Assistant Principal. Mr. Young is an expert skep maker and made this skep of broom corn since wheat or rye straw was not available in south Texas. Incidentally, broom corn proved to be a superior material for skeps.

Gary Egeberg of Volga, stands one of his crop spraying airplanes, this one equipped with lights for night spraying to protect honeybees. Egeberg received the aerial sprayer of the year award from the S.D. Beekeepers' Association.

News Bulletins And Instruction Media

The Scope of Tropical Apiculture (IBRA Reprint M. 102)

THE RANGE, benefits and problems of tropical apiculture are exciting in their scope and diversity.

In **The Scope of Tropical Apiculture** Dr. Eva Crane introduces the subject and shows the amount of material available. Originally published in **Bee World** No. 1, 1980, it was compiled from the Introductions of the various parts of the **Bibliography of Tropical Apiculture**, which is discussed below. The article provides a brief survey of apiculture in the tropics and subtropics and, like the **Bibliography** itself, deals systematically with the separate regions, than with the honey-producing bees, their management and the equipment used for it, their products, the plant energy resources from which these are ultimately derived, and the role bees play in pollinating the plants. Finally, the tropical regions as a whole are set in perspective.

The Scope of Tropical Apiculture (IBRA Reprint M.102) may be purchased direct from the International Bee Research Association, Hill House, Gerrards Cross, Bucks. SL9 ONR, price 90p or US $3.00, including postage.

During the past two years the International Bee Research Association has been involved in the preparation of the **Bibliography of Tropical Apiculture**, which, together with its distribution of developing countries, has been funded by grant-aid from the International Development Research Centre, Ottawa, Canada. The resulting 380-page publication containing 4045 bibliographical entries is now bound and is available direct from IBRA, price 30 pounds or US $68 (24 pounds or US $54 to IBRA members, appropriate voluntary workers, individuals in developing countries, and full-time students).

The 24 parts which make up the **Bibliography** can also be purchased separately from IBRA, who will send details and prices on request (leaflet BOTA/7).

Caron Will Speak On Backyard Queen Rearing At 1980 EAS Conference

BACKYARD QUEEN rearing will be explained by University of Maryland's Apiculturist Dr. Dewey Caron at the convention this summer.

Dr. Caron will also be giving a three-day beekeeping course August 11, 12, and 13. The Convention will be held at the University of Vermont in Burlington on August 13 -16.

Workshops will be held at the beautiful Shelburne farms on Lake Champlain.

Don't miss this one it should prove to be a more interesting and entertaining convention.

NEWS and EVENTS

ILLINOIS
Illinois State Beekeepers' Association

In conjunction with the October 10th first day of issue of the honeybee embossed envelope a beekeepers' meeting, hosted by the Illinois State Beekeepers' Association, will be held in Paris on Saturday, October 11th. Everyone is welcome, but invitations will be sent to all midwestern state associations.

The Chamber of Commerce and organizations of the community are becoming enthusiastic about this and are planning a large celebration.

We are preparing a list of lodging accommodations which we will have more information on at a later date.

PENNSYLVANIA
Beekeeping Short Course

The annual beekeepers short course will be held on the main campus of The Pennsylvania State University from August 4 to 8, 1980.

Topics to be discussed in the course are: Beekeeping Equipment; Colony Organization; Beginning with Bees; Products of Honey Bees; Construction of Hives; Swarming and Its Control; Communication in Honeybees; Making Divisions or Increase; Pollination; Hiving a Swarm; Demonstration of Queen Mating and Rearing; Extracted and Comb Honey Production; Processing Honey; Honey Plants of Pennsylvania; Honey Houses; Fall, Winter, Spring and Summer Management; Insecticides and Honeybees; Marketing and Preparing Honey for Show.

Registration fee is $40 for Pennsylvanians and $45 for non-Pennsylvania residents. Fee is payable at the time of registration on August 4.

In considering University housing, registration is from 2:00 to 3:00 p.m., Monday, August 4. Classes begin at 3:00 p.m. and end at noon on Friday, August 8. Housing will be available for the nights of Sunday, August 3, and Friday, August 8, if requested. Housing reservations must be made before July 27th.

To enroll, please mail in an application blank available from the Office of Short Courses in Agriculture, 306 Ag. Adm. Bldg. The Pennsylvania State University, University Park, PA 16802.

Please Note: Bring your own veil and gloves.

GEORGIA
Beekeeping Short Course

The annual beekeepers short course for beginners and more experienced beekeepers will be held on June 7, 1980, at the Universtiy of Georgia in Athens Georgia.

Topics and demonstrations will include honeybee biology and behavior, bee diseases, management for honey production, honey house operation, queen rearing and package bee installation.

The teaching staff will consist of several specialists including commercial honey and queen and package bee producers. The course fee is $20.00 per person. Advanced registration is requested by June 5, 1980.

Requests for additional information, program and registration forms should be addressed to Dr. Alfred Dietz, Department of Entomology, University of Georgia, Athens, Georgia, 30602.

NEW YORK
Beekeeping Short Course

Cornell University, Ithaca, NY 14853
July 18-20, 1980
($10 Advance Registration Required — not refundable)

Friday evening, July 18
5:00-8:00 p.m. Registration
7:30 p.m. Movies on bees

Saturday, July 19
8:00 a.m. Registration
8:30 Honey and Honey Products
9:30 How to Start in Beekeeping
10:30 Seasonal Management

1:00 p.m. Bee Diseases and Pesticides
2:00 Rearing Queens
3:00 Producing Comb Honey
4:00 Honey Plants
6:30 Banquet (with speaker)

Sunday, July 20
9:00-10:00 a.m. Lecture: Beekeeping Equipment
10:00-12:00 Workshops
1:00-3:30 p.m. Open house and demonstrations — Dyce Laboratory

Instructors include Professor Roger A. Morse, Cornell Lecturer Jon C. Glase, New York State Chief Apiary Inspector Gerald Stevens, retired Extension Specialist in Apiculture at Pennsylvania State College, Professor W. W. Clarke, Author and Lecturer Bess Clarke, Author and Lecturer Dr. Grant D. Morse, Commercial Beekeeper Jonathan P. Ryan, and graduate students Richard Nowogrodzki, Kirk Visscher, Ken Ross and Gene Robinson.

Participants will stay in student dormitories and eat in the University dining room. Lecture and demonstration rooms are air conditioned; the dormitory dining room and lecture hall are within a few hundred feet of each other. Enrollment will be limited. The total cost is $80 per person. This includes a single room for two nights, three meals on Saturday and two on Sunday, all instruction materials and the advance registration fee. Double rooms are $5.00 less per person (total $75). Full linen service is provided. Registration forms may be obtained from: Office of Apiculture, Department of Entomology, Comstock Hall, Cornell University, Ithaca, New York 14853.

Special Note:

A certificate of attendance is given to each participant. These will be available at Dyce Laboratory on Sunday afternoon only; certificates cannot be mailed.

During the open house at Dyce Laboratory, Sunday afternoon, with weather permitting, Professor Clarke and Mr. Stevens will demonstrate how to examine and inspect colonies in the nearby apiary. At the same time, graduate students will take groups of four to six people, who have never handled bees before, to remote bee yards where they may learn how to open and manipulate a colony. The colonies will be small units set off by themselves so as to reduce the chances of people being stung. Each person will be coached in how to open a hive, remove frames and make a routine examination. We will have veils, smokers, and hive tools available. We discourage the use of gloves; however, persons who feel they cannot make a colony examination without them may wear their own gloves.

The sessions with small groups will be repeated about every hour so that everyone should have an opportunity to

examine a colony and to observe Professor Clarke and Mr. Stevens doing so. The Dyce Laboratory will be open all afternoon so that everyone should have ample time to participate in all the activities.

Participants are invited to bring samples of their honey for examination and comment on Sunday morning. A beekeeping equipment supply dealer will have his wares available at Dyce Laboratory on Sunday afternoon.

OHIO
Agricultural Technical Institute

Two classes (Honey Processing and Honeybee Diseases) that are normally taught during the academic year at the Agricultural Technical Institute will be offered for the first time during summer months. The dates are June 23 - July 28, 1980, and each course carries three credit hours. Local independent housing will be available. Enrollment is strictly limited to 20 people.

For more information, including class syllabi, contact:

The Agricultural Technical Institute
Wooster, Ohio 44691
ATTN: Dr. James E. Tew
216-264-3911 ext. 263

ILLINOIS
Illinois State Beekeeper Association

The Illinois State Beekeepers' Association Summer Meeting will be hosted by the Tazwell Beekeepers' Association.

The meeting will be held July 12, 1980 at the Pekin County Agricultural Building, Pekin, Ill.

More Information will follow as available.

MINNESOTA
Minnesota Beekeepers' Association

Minnesota Beekeepers' Association, Inc. will host its Summer Convention at the Holiday Inn, St. Cloud, MN, located on West U.S. 52 at 37the Ave., St. Cloud, MN

Dates are:

July 17th p.m.	Thursday
July 18th All Day	Friday
July 19th a.m.	Saturday

Phone early for your reservations, 612-253-9000. Keynote speaker will be Larry Atkins, pesticide specialist from the University of California, Riverside, California.

PENNSYLVANIA
Northwest and Venango County

There will be a joint meeting of the Northwest Beekeepers' Association and the Venango County Beekeepers' Association at Burgess Park in Titusville, PA. Saturday June 21st at 11:45 a.m. Dinner at 1:00 p.m.

NEW JERSEY
Cook College Short Courses

A three-day course in beginning beekeeping will be given June 16 to 18, 1980. This course will be in the Food Science Building on the Cook College Campus. Classes will be from 9 a.m. to 4 p.m. with one hour for lunch. Bee veils will be supplied.

The teaching staff will be Dr. Radclyffe Roberts. Dr. Robert Berthold and J. C. Matthenius.

Expenses are : College registration, instructional and miscellaneous fees, $35.00. Registration forms may be obtained from the Office of Resident Instruction, Cook College, Rutgers University, P. O. Box 231, New Brunswick, NJ 08903. Telephone 201-932-9271. Mail your application by June 1st.

A three-day course in advanced beekeeping will be given July 16 to 18, 1980. This course will be given in the Food Science Building, Maclinn Auditorium on the Cook College Campus. Classes will be from 9 a.m. to 4 p.m. with an hour for lunch.

The instructors will be Dr. Radclyffe Roberts and Dr. Robert Berthold.

Expenses are $35.00, for college registration, instruction and miscellaneous fees. Register by July 1st.

Registration forms may be obtained from the address given above.

Housing in University Dormatories may be arranged.

CANADA
Golden Horseshoe Beekeepers' Association

A new association for the benefit of beekeepers and interested people has been formed, roughly covering the area at the western end of Lake Ontario, the golden horseshoe as it is called. Meetings are held almost every month, featuring interesting lectures, slide presentations, films or other programs. For the time or place of the next meeting please write to Golden Horseshoe Beekeepers' Association, P.O. Rockton, Ontario, L0R 1X0 or call the Secretary at (519) 647-2730.

OHIO
Tuscarawas County Beekeepers' Association

The Tuscarawas County Beekeepers' Association will hold its summer meeting and picnic on June 8th at 12 noon at Ninevah Grange Hall on State Route 416. Coffee will be furnished. Door prizes and contest. Anyone interested in bees is welcome.

CONNECTICUT
Connecticut Beekeepers' Association

The Summer Field Meeting of the Connecticut Beekeepers Association will be held on Saturday, June 28, 1980, at the farm of Prof. Alphonse Avitabile, Carmel Rd., Bethlehem, Ct.

Professor Avitabile will conduct demonstrations respecting "The Two Queen System", "How to Make a Split" and "Swarming Behavior". All persons intending to observe the demonstrations are urged to bring their bee veils to assure their personal safety while enabling them to participate in a close-up manner.

The usual potluck luncheon will be served at noon. Bring something you enjoy for the picnic table. Coffee is "on the house".

For detailed information on how to get to the Meeting Place, you may telephone Mr. Avitabile at 266-7810 or by writing to the secretary at 46 Climax Rd., Simsbury, CT 06070, or telephone 658-5013.

All beekeepers and friends are extended a cordial invitation to attend.

NEW YORK
Empire State Honey Producers Association

The annual picnic of the Empire State Honey Producers Association will be held at Dyce Laboratory, Cornell University, Ithaca on Saturday, July 26.

OHIO
Agricultural Tech. Institute

A one-day course on honey queen rearing will be taught at the Agricultural Technical Institute, Saturday, July 19, 1980. The subject material will include discussions on hobby queen rearing as

well as beginning commercial queen rearing. Dr. Malcom T. Sanford and Dr. James E. Tew will instruct. Registration cost is $10.00 per person.

A one-day course on comb honey production will be taught at the Agricultural Technical Institute, Saturday, August 9, 1980. The subject material will include discussions on management of hives for comb honey equipment. Dr. James E. Tew and Dr. Mark Headings will instruct. Registration fee is $10.00 per person.

For complete information about the above two courses contact: Dr. James E. Tew, Agricultural Technical Institute, Wooster, Ohio 44691, phone 216-264-3911.

Obituaries

R. F. "BARNEY" REMER

R. F. "BARNEY " REMER, 89 retired secretary-treasurer and general manager of the Sioux Honey Association, died the last of April at a Sioux City care center.

Mr. Remer was associated with the Sioux Honey Association almost from its inception, serving in executive capacities for 42 years until his retirement in 1967. He assumed management of the company when there were only three local beekeepers, including its former president, Edward Brown. Honey was being sold door-to-door at that time.

Production under his management grew from 200,000 pounds of honey a year to more than 50 million pounds marketed for more than 1,000 honey producers in 22 states.

He was born Feb. 2, 1891, in Le Mars and married Margaret St. John there in May, 1912. They came to Sioux City in 1914. She died Nov. 7, 1970.

Survivors include a brother, William of Fort Dodge, Iowa, a nephew, niece and a sister-in-law, Mrs. Maud Esse, who made her home with the Remers.

Bee Disease Scare Over In Maryland

THIS OPTIMISTIC report comes from Dr. Dewey M. Caron, Extension apiculture specialist and acting entomology department chairman at the University of Maryland in College Park.

The scare came in the form of the tiny parasitic mite bearing the scientific name, *Varroa jacobsoni*. Two of these mites had been found dead last fall in a vial containing a drone honeybee collected in the Adelphi area by a University of Maryland entomology graduate student.

Honeybee colonies throughout Asia, most of Europe and parts of Africa and South America have been devastated by the Varroa mite since its discovery in 1904. But the dreaded pest was unknown on the North American continent until its apparent Maryland discovery in 1979.

To make sure that the parasitic mite had not gained a foothold, some 27 central Maryland beekeepers with 84 colonies in a 30-square-mile area of Montgomery and Prince Georges counties voluntarily allowed their honeybee populations to be destroyed in late March by apiary inspectors from the Maryland Department of Agriculture. The University of Maryland's 12-colony teaching apiary at College Park was included in this program.

All of the affected hives were hauled to a central location, meticulously disinfected, and painstakingly examined for any evidence of varroa infestation. None was found.

So the hives were restocked in mid-April with new bees donated by the American Bee Breeders Association and returned to their owners.

Several state beekeepers organizations around the nation have contributed money to help reimburse the affected Maryland beekeepers for total or partial loss of their 1980 honey crop. Funds are being administered by a subcommittee of the Maryland State Beekeepers Association.

Dr. Robert M. Altman, assistant secretary of the state Department of Agriculture, has recently written to plant regulatory officials throughout the U.S., assuring them that a varroa infestation does not exist in the bee colonies of Maryland.

Indemnity Program Discussed With Secretary

SECRETARY OF Agriculture Bob Bergland met for one hour in Washington with a delegation from the American Honey Producers on Friday, April 25, to discuss the proposed closing of the indemnification program. Testifying for the program were Clarence Benson and James Smith of Arizona, Glenn Gibson of Oklahoma and Roger A. Morse of Cornell University, Ithaca, NY. Those present felt the secretary was attentive and interested. He asked many questions. While he made no commitment he did indicate the problem was serious and gave the impression he would pursue it.

MONTHLY HONEY REPORT

(Continued from page 310)

and cold temperatures. Northern white honey being offered at 48¢ to 49¢ wholesale, no dark honey being bought. Honey is going to be in competition with the jams and jellies.

Region 8

Moisture conditions are better on the west of the Divide in Montana because of rainfall. Bees in excellent condition. Alfalfa and the clovers look great.

Region 9

Honey sales reported slow in Oregon. Wildflowers blooming well in California as a result of generally good moisture conditions. Sage and buckwheat honey crops look promising. Citrus and avocado producing nectar during April. Bee colonies in excellent condition. Demand for pollination bees is generally good with fees running $15.00 to $18.00 per colony on the average. Honey market has softened as economic conditions, both domestic and foreign bringing pressure.

BEEKEEPING IN ROMANIA

(Continued from page 349)

Acacia is used as a diuretic, a mild laxative and as a mild sedative. It contains high quantities of fructose, the reason attributed for its failure to crystallize.

Tilia or linden is used to treat coughs bronchitis and as a sedative to induce sleep. It contains farnesol, a material carried in essential plant oils, rich in a delicate flower-like aroma.

Sunflower is used as a mild laxative, diuretic and to stimulate circulation. It contains volatile oils, flavorids and is rich in minerals.

Forest is an almost black honey. It is used as a tonic, to treat respiratory infections, as a diuretic and to treat stomach distress. It is considered higher in ten or more minerals than any other honey.

Mint is used as an analgesic for pain, gastro-intestinal distress, and colitis. It is rich in menthol, thymol, volatile oils, aldehydes, and methyl alcohol.

Mixed flower is used as a diuretic, laxative, sedative and calmant. It crystallizes readily.

Royal jelly is used as a biological stimulator and regeneration of the nervous system.

BEE TALK

(Continued from page 336)

of the hive also serves as a perfect queen excluder. The queen does not cross up over combs of honey to lay eggs above it; the brood nest is kept below the parts of the comb where honey is stored. So it all works out just beautifully — lots of honey in the hives to get the bees through the winter, then enough left in the spring to serve as a queen excluder, and insure powerful colonies to bring in those big crops for me.

I keep the swarming down by selling nucs. When I see a colony that looks like it is getting so strong it is going to swarm, then I just take a few combs of bees and brood right out of the center, put them in a nuc box, give them a new queen, and sell the nuc. That way I keep the swarming down in the simplest way imaginable, and make a little money doing it. There always seems to be plenty of demand for nucs.

June is the celebration of life. Gardeners know what this means. So do beekeepers. And if you're both, like me, then you can hardly fail to know what happiness means too.

RESEARCH REVIEW

(Continued from page 337)

Penncap-M is not the kind of insecticide that I see fitting into our long-range goals in pest management in agriculture at this time. It is possible that Pennwalt could find some ways of circumventing the problem, but they have shown little interest in funding research to do so, or in undertaking such research themselves. Beekeepers across the country can do much to eliminate this insecticide from the marketplace by carefully documenting losses and reporting these to state officials and the Environmental Protection Agency in Washington, D.C.

REPORTING OF PESTICIDE INVOLVEMENT IN BEE KILLS

(Continued from page 331)

New Jersey State Health Department
John Fitch Plaza
P.O. Box 1540
Trenton, New Jersey 08625
Telephone: 609-292-4060

(Utah, Arizona)
Rick Gibson
Epidemiologic Studies Project
College of Agriculture, UMC 46
Utah State University
Logan, Utah 84321
Telephone: 801-750-1600

(Hawaii)
Ann Budy/Wataru Takahashi
Epidemiologic Studies Project
University of Hawaii, Monoa
1997 East West Center Road
Honolulu, Hawaii 96822
Telephone: 808-955-6570

THE HOCKLEY HONEY FAIR

(Continued from page 327)

Have we had any problems? Yes we have, but they have been largely overcome.

In this area many beekeepers have not extracted all of their honey by the first of September, so when they are asked by phone if they are going to be selling, they reply frankly that they don't know yet. To get around this problem we just suggest that if anyone is really keen on being there with something to sell, he or she should just make up an extra hive or two in spring. This means that planning has to be done early.

With all those friends and customers, the Fair tends to run you off your feet, and after all you are there to enjoy yourself. Everyone who stops by will want to know what flowers your honey comes from, and just where you keep your bees. If you put this information on your sign together with your name and price list, you won't have to answer these questions. But then again you may miss talking to someone interesting. The best solution is to use the buddy system. One sells, the other explains and demonstrates. Then change about or one takes off for a walk around.

Just about all of us will be selling liquid extracted honey in the usual one or two-pound containers. The trick is to make your table seem different. Ed Dickie has his collection of beekeeping antiques and a couple of supers of buckwheat comb honey in wooden sections— a very rare sight in Ontario these days. Chris Bishop has the silver rosebowl and ribbons he won for the best liquid honey at the Royal Winter Fair. Hans Paul sells his honey in his own finely-crafted ceramic pots. Eugene Roman features his beautiful girl friend up front.

Can the Honey Fair make money? Yes it can, and does. At first, when there were large, one-time expenses such as signs and banners, posters and so on, we charged the vendors a fee of five cents on every dollar of sales. Now that these expenses have been paid for we have cancelled the levy. We do, however, turn over to our association all the profits from our refreshment booths, our T-shirt sales and our honey raffle. The Honey Fair doesn't cost our club a cent, but it sure brings in new members. It also brings us a lot of publicity which we can use in our support of nectar producing plants on public roadsides and our concern against indiscriminate use of insecticides.

Contrary to the usual advice offered to groups organizing fairs, we have never approached the local municipal or township agencies for their cooperation. We have simply paid our own way, caused no extra work or expense to anyone, and carried lots of insurance.

PESTICIDE DRIFT PETITIONS

(Continued on page 332)

2. A points system for pilots licenses is proposed to penalize them from spraying without written permission.

3. It is asked that integrated pest management be advertised on every pesticide label.

4. While not in the original petition, E.P.A. has been asked to routinely require pesticide spray thickeners, costing only 30 cents an acre, yet dramatically reducing spray drift.

5. Friends of the Earth will be lobbying to have beehives included by name as protected property and pilots given points for killing hives without prior written permission.

If anyone would like to help with letters, write Erik Jansson, Friends of the Earth, 530 — 7th Street, S.E., Washington, D.C. 20003. He will send you addresses and further details of the petitions.

JOURNAL OF A BEEKEEPING NOVICE — YEAR 3

(Continued from page 322)

operation — enough free honey for our own use with a minimum of time expended. And next year, who knows? Maybe the weather will be perfect, maybe the crop will be huge. Maybe.

*Mrs. Bonta is the author of the book **Escape To The Mountain** published by A. S. Barnes & Company. It is a story of their life on a Pennsylvania mountain (a country-nature account without bees since it was written before they began beekeeping).

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5-lb.pkg.	w/q	35.35	34.60	34.10	33.60
Queens		6.10	5.90	5.75	5.60

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		1-3	4-25	26-99	100-up
2-lb. pkg.	w/q	$18.75	$18.35	$17.95	$17.60
3-lb pkg.	w/q	23.60	23.20	22.80	22.40
5-lb. pkg.	w/q	35.75	35.00	34.50	34.00
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THE INTERNATIONAL BEE RESEARCH ASSOCIATION regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Consultant IBRA Representative for USA: J. Englhardt, 1500 Maywood Avenue, Ann Arbor, MI 48103. 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.

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INDIAN BEE JOURNAL Official Organ of the All India Beekeepers' Association, 817, Sadashiv Peth, Poona 411 030 India. The only bee journal of India Published in English, issued quarterly. Furnishes information on Indian honeybees and articles of interest to beekeepers and bee-scientists.

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