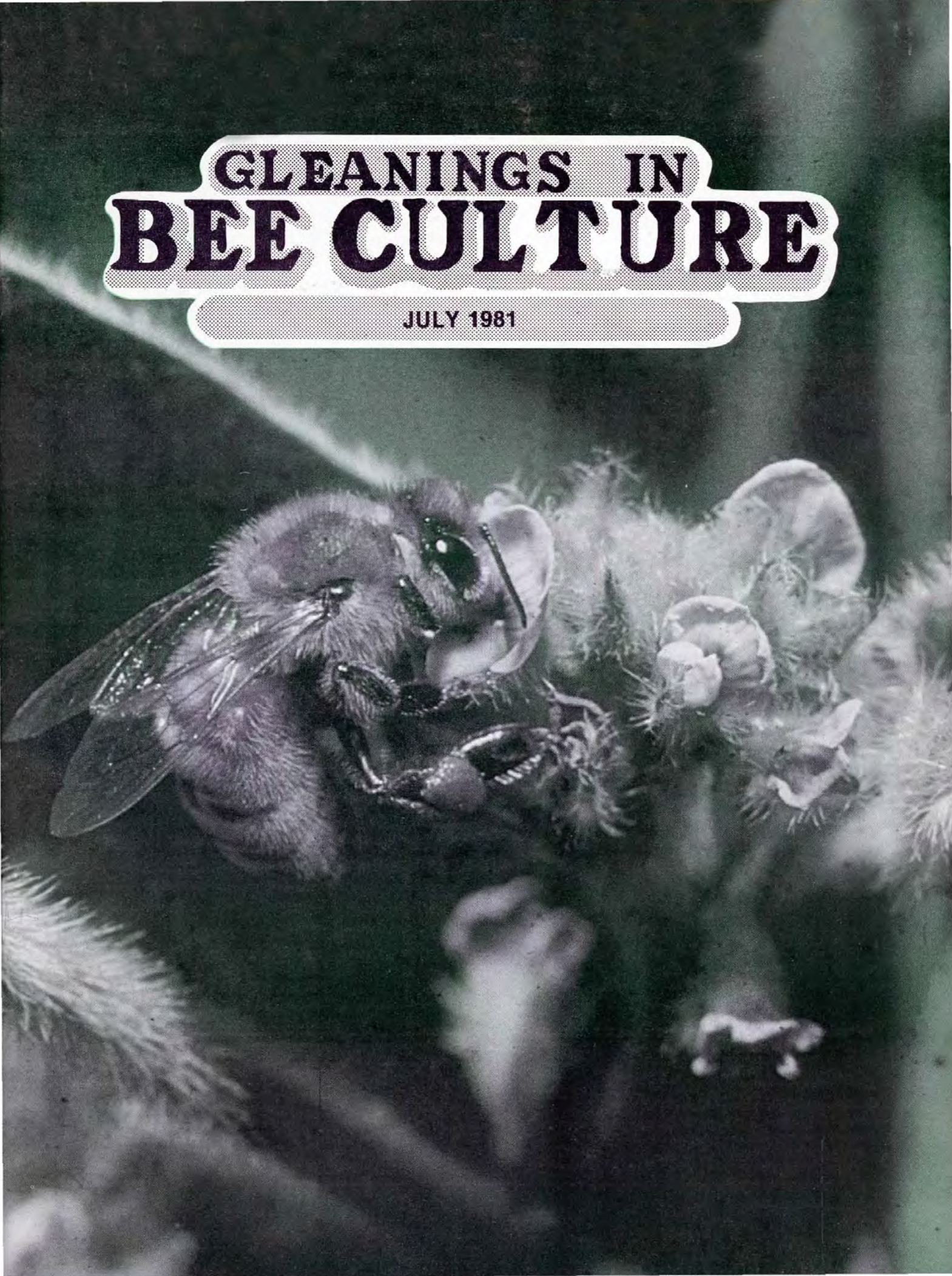

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JULY 1981

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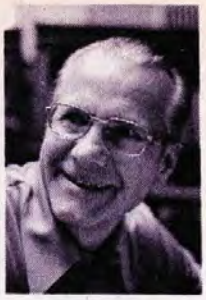

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COVER STORY

The soybean (*Glycine max*) produces nectar in the midwest United States, particularly the Missouri-Mississippi valley. Soybean pollination by honeybees may increase the yield of beans under certain conditions. The honey quality is good.

Gleanings In Bee Culture

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Created to Help Beekeepers Succeed
108 Years Continuous Publication by the Same Organization

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Striving For High Honey Yields

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

ALL EFFICIENCY minded beekeepers are concerned to have their colonies produce as much honey as possible. A few amateurs who are primarily interested in the romance and thrill of small scale beekeeping may be exceptions.

Beekeepers tend to divide themselves roughly into three classes: The commercial operator; the semi-commercial beekeepers who owns and operates approximately 50-500 units; and the amateur or beginner with fewer than 50 colonies (usually 1-10).

The colonies owned by the first two groups (they operate about 44% of all the approximately five million coloniess in the U.S.) produce about 12 pounds more honey annually per colony than do the units owned by amateurs and beginners.

If the whole truth were revealed, it would doubtless show that the owners of 50-500 colonies secure the best yields.

What can a beekeeper, regardless of which class he falls into, do to increase the yield per colony? Of course, the operator must have some criteria by which to judge the comparative productiveness of his colonies. He can determine this to some considerable extent by comparing yields between his yards headed by different strains of queens; and by comparing his yields with those of his neighbors.

Comparing his yields with national averages means little since so much depends upon the nature and extent of the local nectar supply. The first factor to examine is the quality of one's queens. By using different strains (not races), an operator can often determine capability in producing maximum crops.

Management comes next. Has the operator followed the best wintering methods? Is his requeening policy satisfactory? Third, is he taking maximum advantage of available nectar flows? Let us examine these factors in reverse order.

Available Nectar Flows

Some operators who would truly like to increase per-colony yield neglect available flows. They establish their yards and never move their colonies. An operator who wants maximum production can not afford to do this.

It is true that finding profitable nectar flows that preced or follow the flows available to the bees in one's established yards is not always easy. Such opportunities will vary greatly from one community to another, and from one geographical area to another. I'm certain there are nectar flows of this kind of which I have never heard, but which may be quite familiar to you. But I can think of a small number.

Take purple loosestrife as one example. It normally yields best between the early summer flows (clovers, sumac, basswood and the like) and the fall flows (such as goldenrod and aster). In many areas purple loosestrife does not yield heavily enough to enable colonies to build a surplus. In other regions, especially in some years, it yields rather satisfactorily. A beekeeper whose bees need the kind of yield that loosestrife provides might well look to moving some of his bees to such an area after the local flows are over. Most well watered areas in the nothern part of the U.S. support the growth of loosestrife today.

Or examine the possibilities offered by wild thyme which flourishes in some of the more elevated regions of New York State and of New England. This flower begins to yield about July 10 and continues to do so until frost.

As a table honey, I believe few except the initiated, would recommend wild thyme. But it normally yields prolifically and serves as a copious supplier of winter stores for the bees. Even for this purpose it may not be the best, but it does quite well.

Or examine the potential in late yields from alfalfa. It is often a very unreliable nectar source because farmers tend to cut it at about the time it is ready to yield. But its possible benefits may be profitably explored.

Even goldenrod and aster are excellent fall sources in areas where they yield. Their yield varies tremendously in New York State, being heavy and reliable in certain localities and of negligible worth in others.

Moving Bees by Truck

Of course, giving bees a chance to work on nectar sources geographically removed from their usual habitat necessitates moving the bees. That need not be regarded as a major operation but it does entail some work, some expenditure of time, and some know-how.

Bees are best moved when it is cool enough so that they do not come out the entrances. But it's seldom cool when a move occurs of the type I am sugguesting. It's best to move at night, loading just before dark, and unloading at the new location early enough in the morning to discourage the bees from starting to fly before being set on their new sites.

The hives should be so placed on the truck that the entrances receive a flow of air as the vehicle moves along. Often screened covers must be used. Vibration of the carrying vehicle discourages the bees from taking flight or coming out of the entrances.

Water should be made available for wetting down the bees if they start to become overheated. It is their chief agent for cooling themselves. I wish I had realized the part the use of water should play in moving bees when I moved my first colonies.

I well remember on one occasion arriving at a new location just a little bit late in the morning. Large numbers of bees had gathered on the outsides of the entrances of many of the hives. I did not realize the desirability of applying water which was immediately available. The

young man I had engaged to help me unload was lightly clad, and a bit more lightly clad in valor. He gave up after helping lift the third hive. I went to the nearby barn where the farmer was milking. He came promptly to help me in spite of being clothed in garments that were a bit too well identified with the odor of cattle. He was roundly stung but kept manfully at the job until we were unloaded. I shall never cease to be grateful to him.

When colonies are set down on new locations during daylight in warm weather, they may drift badly. To avoid this, the units should be placed not too closely together. I believe it helps greatly also to place an obstacle of some kind temporarily in front of each entrance. A branch or small bush serves the purpose well. It helps to slow the exiting bees and causes them to orient a bit.

Of course, moving bees in single hivebodies is all right for one operator to perform but today's colonies are almost invariably housed in two hivebodies, as were mine, and are consequently a little too heavy for one man to handle.

Management Aimed at Heavy Production

If an operator desires maximum production from his colonies, they must be at good strength when the nectar season begins. This is one reason for the popularity of the bee of Italian ancestry. It tends to build up early.

But to secure that early strength, colonies must have been headed by good queens. Often they will have profited from being packed, and adequate upward ventilation during the winter should have been provided.

Further, the operator must follow a plan of swarm prevention that actually works — that truly prevents nearly all loss of strength through swarming. Some choices of swarm preventtion will be briefly described later in this article.

Quality of the Queens

The quality of the queens often receives less emphasis in the thinking of the typical beekeeper than may be desirable.

We know how people vary — and vary in productiveness. Honeybees and their queens vary too in their productiveness. As suggested earlier, if your colonies seem not to be producing so well as some others in your neighborhood, it may be very profitable to you to study this detail.

The Prevention of Swarming

The better the beekeeper, the better the liklihood of one's bees swarming. So, the only alternative left to the good beekeeper is to be just as good at swarm control as he is in bringing his colonies safely through the winter and into a condition conducive to swarming.

This is not the place for a full treatise on how to do it. The story is too long. But I can say that, following some one of many recommended routes, the beekeeper must keep part of the brood separate from the vicinity of the laying queen.

Some operators make up a separate unit, and furnish it with a queen. Others follow some variation of Demareeing. Some even adopt the two queen system.

The Two-Queen System

Not everyone is adapted to operating the two queen system. One must know a bit about bees to do it succesfully. He must be willing also to perform the manipulations entailed.

They consist of elevating most of the sealed brood and the emerging bees above a screened inner cover, and adding a young queen to this upper unit. Approximately two weeks later, when the young queen is laying nicely and a good part of the bees are exiting through a separate route, a queen excluder can be substituted for the screened inner cover. The bees of the two units subsequently mingle of some extent, largey in terms of the needs of each unit.

The method has advantages and disadvantages. The favorable aspects include: 1.) The separation of the old queen and part of the brood; 2.) The provision of the young queen that later in the season will become the queen mother of the colony; 3.) The numerical strength of the working force is thereby nearly doubled; 4.) Swarming is largely eliminated; 5.) The honey getting power of the unit is nearly twice as great as a unit headed by one queen; 6.) Less equipment is needed than if the unit were divided into two equal parts; 7.) The new queen is more readily accepted than is true when two separate units are united; 8.) The quantity of the pollen provided for wintering is increased — a valuable asset in the early springtime.

Disadvantages: 1.) The unit may become too high to make its manipulation easy; 2.) Reversing may have to be done to both parts of the unit, thereby causing some confusion among the incoming gatherers while the upper unit is out of place; 3.) The queen below must usually be disposed of at the time of union unless the operator is willing to let the bees make their choice of queens. If this policy is followed, I recommend marking the upper queen at the time of introduction so that the operator can eventually determine which queen was accepted; 4.) There may be some uncertaintly when finally to remove the queen excluder. Some operators do this shortly after the chief nectar season has begun and before too much lifting must be done; 5.) Supers must usually be added to both units else congestion even under this system can occur.

It is my conviction that for the operator who has the inclination, and the skill to perform the necessary manipulations, the two queen system can materially boost the yield of a colony of bees. The increase in yield can far outdistance the cost of an additional queen. Today, a couple of full frames of honey will defray the cost of commercially raised queen. I do not recommend the two-queen system to a beginner.

The Varroa Mite

The importation of honeybees and honeybee queens into the U.S. from foreign countries has been contrary to law for several years. One of the chief reasons for the enactment of the law was to prevent the importation of the Acarine mite, *Acrapis woodi.*

The Acarapis woodi mite is especially damaging to the honeybee, *Apis mellifera*, because it completes its entire life cycle within the breathing tubes of spiracles of the bees.

But another mite that may be even more damaging to our species of honeybee is *Varroa jacobsoni.* It causes damage by feeding on the blood of larval, pupal, and adult honeybees.

The Eastern bees on which these and other mites are believed to have flourished (chiefly *Apis cerana* and *Apis dorsata*) before infesting our honeybee, *Apis mellifera,* appeared to be able to tolerate their presence and still function productively. Not so our bee, the European bee.

When some of our European bees

were introduced into the Eastern countries because of their reputation of production greater surpluses than the Eastern bees, our species became infected.

From these infestations of our European bee, the *Varroa jacobsoni* mite has spread to Europe, North Africa, and South America. Its introduction into the United States could be an easy matter. All that would be necessary would be for a beekeeper who thinks the importation law superfluous, to bring an infested queen into this country from one of the continents where it prevails.

The *Varroa jacobsoni* mite was discovered by Oudemans in Java in 1904. Like all other mites, this species has four pairs of legs. It is not an insect. Insects have three pairs of legs. But mites are more closely related to insects than to any other animal group.

The female mite enters the cell of a bee larva just before it is sealed. Inside the capped cell the mite lays 3-8 eggs. The life cycle of this mite is 8-11 days. Honeybees that have been attacked by this mite typically show a shortened abdomen and damaged wings or legs. Mites are carried to the members of near-by colonies in an apiary by drifting workers and drones.

Research studies are currently underway in several centers to determine how best to deal with the mite, *Varroa jacobsoni.* Recent research reveals that this mite begins to breed when brood rearing of the honeybee begins in the spring, and that it continues until cold weather sets in.

As noted here previously, the mite is damaging to the adult bee as well as to the larvae and pupae. It contributes to additional infestations by microorganisms by making wounds in the bees. Symtoms of infestation include: Dead larvae, pupae and crippled bees and drones, malformed workers and drones crawling and jumping and unable to fly.

Death to colonies varies with the degree of infection, being up to 10-15% in the first year, 20-30% in the second, and up to 100% in the third and fourth years.

To date there are no data to show that this mite has gained a foothold in the United States. We trust that this continues to be a fact.

Poisoning of Honeybees

Poisoning of our bees seems a remote possibility until it happens to our own colonies. We need constant publicity of the extent to which bees in our area are actually being poisoned.

Writing in the *Empire's Honey Producer* (N.Y. State) published semi-annually, the retiring president of the Empire State Honey Producers' Association, Edward Doan, declares that yard after yard of his bees were poisoned this past summer by Penncap-M® , an encapsulated insecticide. He correctly warns beekeepers experiencing poisoning of their bees to inform their local ASCS office, and the Dept. of Environmental Conservation.

Folks who do not keep bees seldom know of the very significant role played by the honeybee in pollinating the crops that produce approximately one third of our food. They think bees are producers on honey only, and assume it is up to the beekeeper to confine and limit his concern about poisoning from insecticides to his own private welfare.

The most common symptom of bee poisoning is the presence of large numbers of dead bees in front of the hive entrances. Other indicators are stupefaction, paralysis, and abnormal movement.

Comtaminated pollen that has been brought into the hive is often the first source of the poisoning. Newly-emerged workers and nurse bees usually ingest this pollen first, and die. The brood cycle is broken, both larvae and pupae dying. The queen often disappears, having not been fed an adequate quantity of royal jelly, the production of which depends in good part on the availability in the hive of high quality pollen supplies.

Insecticides that have a short effective life can usually be applied during the late evening, night, or early morning, with the liklihood of least hazard to bees. Dust applications are usually more dangerous to bees than sprays.

Too often the insecticides in powder or dust form may be unwittingly collected by the bees as being pollen. Most poisons when stored in pollen do not retain a lethal power from one season to the next. There are two exceptionsa: Carbaryl (sevin) and microencapsulated parathion. The last named posion is the greater hazard to the two.

Both beekeepers and users of insecticides need to study thoroughly all means of avoiding the lethal effects the use of insecticides can entail.

The civilian population of the U.S. is currently aroused to the threats of health and life posed by hazardous wastes not properly disposed of by manufacturers creating them. Every effort should be made by beekeepers to show the threatening effects of insecticide poisons in a similar light. This is a matter of public concern.

Fifty Years Among the Bees

I have just completed reading once more Dr. C.C. Miller's *Fifty Years Among The Bees.* The copy I have is a new paperback edition printed by the Molly Yes Press (1.). The book was originally published by The A.I. Root Company.

Here is a beekeeper who had charisma. It shows in his writing which reads like a novel yet deals almost wholly with the fundamentals of beekeeping as Dr. Miller experienced it. He was a very methodical man. He kept a record of all expenditures. He was able to report that when he finished college, where he paid his own way, he left with fifty dollars more in his pocket than when he entered.

He became a medical doctor but gave up following the work of the profession for fear he might make a wrong diagnosis. He then taught school but so much preferred beekeeping that he soon devoted his entire time to it. Specializing chiefly in producing comb honey. Throughout his beekeeping life Dr. Miller experienced considerable difficulty in wintering his bees — in cellars, for that was the custom of the day. Dr. Miller died in 1920.

During his period of beekeeping it was customary to maintain rather larger numbers of colonies in a yard. Dr. Miller averaged about ninety in each apiary, but makes the siginficant commentary that he believed smaller numbers in a yard are likely to produce a better yield. He was very much concerned with his total honey production since it was substantially his sole source of income and support.

Along with his natural charisma, Dr. Miller exhibited a large measure of enthusiasm most of the time. At one point he said: "A born beekeeper never loses his enthusiasm." Yet he was a meditative man who reports being disturbed in his sleep at times

(Continued on page 370)

Monthly HONEY Report

LAWRENCE GOLTZ

June 10, 1981

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

Wholesale Extracted — **Reporting Regions**

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	1	2	3	4	5	6	7	8	9
60 lbs.(per can) White	45.00	31.80	34.20	33.00		38.10	33.00	33.50	32.40
60 lbs. (per can) Amber	45.00	28.80	31.80			34.00	27.60	32.50	31.80
55 gal. drum (per lb.) White	.59		.59	.55		.60	.55	.54	
55 gal. drum (per lb.) Amber			.54			.57	.46	.49	
Caselots — Wholesale									
1 lb. jar (case of 24)	26.50		25.00	22.50	34.80	22.50		21.50	23.90
2 lb. jar (case of 12)	25.00		24.75	21.00	33.60	21.50		18.50	22.15
5 lb. jar (case of 6)	30.00		26.50	23.00		25.50		24.50	26.80
Retail Honey Prices									
½ lb.	.90		.90	.83		.75		.81	.98
12 oz. Squeeze Bottle	1.25	1.19	1.50	1.05	1.75	1.15		1.26	1.33
1 lb.	1.37	1.49	1.54	1.25	1.75	1.35	1.39	1.41	1.69
2 lb.	2.55	2.59	2.85	2.43	3.45	2.40	2.39	2.45	2.85
3 lb.	3.80	4.00			4.88	3.60		3.59	3.99
4 lb.	5.00			4.50	6.80	4.55		4.85	
5 lb.	6.00		5.95		8.50	5.20		5.90	5.99
1 lb. Creamed			1.55					1.45	
1 lb. Comb			1,89		1.87	1.65		1.50	
Round Plastic Comb			1.50					1.35	
Beeswax (Light)	1.80		1.95	1.90	1.85	1.95	1.90	1.90	1.80
Beeswax (Dark)	1.80	1.85	1.90	1.80	1.75	1.85	1.85	1.80	1.75
Pollination Fee (Ave. Per Colony)	30.00		22.50					15.00	

Region 1

Bees are in very good condition but more swarming than usual. Ground moisture is good for a honeyflow and more clover than usual. If it will ever have chance to bloom before it is cut remains to be seen. Gypsy moth spray controls has taken their toll. Honey stocks are low but moving well.

Region 2

Swarming began early. Colonies are strong and season is in advance of the normal. Bees stored some dandelion honey due to a good flow. Fruit bloom was off due to cold weather The honey flow in central Maryland lasts from around early May to June 10th and this should be a good year for honey production in Maryland. Swarming was very heavy.

Region 3

Good spring honey flows. Bees built up well and continue strong with much swarming. Rainy periods during May caused slow-down in Indiana.

Wisconsin had cool weather to start May. Very unsettled weather through May and early June in Ohio. Honey flow prosects are promising if weather settles. Honey sales improving. New retail prices may reflect the 58¢ price to producers. Clover looks promising in Illinois. Many new beekeepers here.

Region 4

Colonies in Minnesota are exceptionly strong although there was a cool, rainy, windy period in the spring. Very heavy dandelion flow in the spring. Strong at beginning of honey flow in Nebraska, where rains have improved the prospects of a good honey flow. Very dry in parts of Minnesota. Plants are about 2 weeks ahead of normal

Region 5

Very dry conditions in North Carolina. Tulip poplar honey flow best in many years. Much swarming, but swarms are small. Very little palmetto honey has been made in Florida this year due to a very dry season. In north Florida the Tupelo yield was good, but the galberry was only good in spots.

Region 6

Good rains in Tennessee during May helped bring on clover, however, moisture is short. Bees built up early and swarming was a problem. In Kentucky, despite considerable rainfall, tulip poplar had the best yield since 1976. In the forested area production was 75 to 100 pounds per colony. Surplus is continuning to come in and the honey crop is appearing to look like a good one. Rainfall above nor-

(Continued on page 404)

INTRODUCING . . .

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Frank Wojcik is the President of the Northwest Jersey Beekeepers Association.

He is a commercial beekeeper located near the border of New Jersey and Pennsylvania. Frank maintains about 300 colonies with apiaries in both New Jersey and Pennsylvania.

He has been keeping bees for about ten (10) years, produces his own honey for sale, rents bees for apple pollination, and raises queens and nucs.

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STRIVING FOR HIGH HONEY YIELDS

(Continued from page 364)

because of thinking over his problems. At one time he was especially worried because he had placed a rather large number of comb honey supers on his colonies (the year 1897) and feared what would happen to him financially if the nectar flow stopped suddenly and left him with partly completed sections. Comb honey production probably carried with it more dangers and worries than the production of liquid honey.

Like so many other beekeepers, he began keeping bees in the community where he lived and did not move. He often regretted this — as probably many a beekeeper has — because white clover was almost the only local nectar source. At one point he remarked: "Never locate in a place with only one nectar source."

Like many other beekeepers, Dr. Miller had his own peculiar habits in pursuing his work. Among other preferences, he liked to sit down while manipulating a hive, and so carried with him at all times in the yard a box that fitted his particular needs.

He was a painstaking student of bee behavior. He believed that the provision of adequate ventilation helps to prevent swarming. He didn't like to get stung in spite of the fact that he frequently had the experience. He believed in the Demaree method of preventing swarming. He declares that if he were to start over again he would consider selecting strains of bees that are inclined to be more gentle.

Like many others of his day, Dr. Miller preferred to be formally dressed when his picture was taken at any beekeeping activity.

A book such as this one seems not to lose its interest or value as the years pass by.

1. *Fifty Years Among the Bees.*,Dr. C.C. Miller. Reprinted by Molly Yes Press, New Berlin, NY 13411. Paperback — $7.95; hardcover — $12.50.

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Micro-wave Ovens

Dear Editor,

I am writing to you in regard to a recent article in *Gleanings In Bee Culture* concerning putting plastic bears in a micro-wave oven.

My wife and I have an apiary of 25 colonies and extract and bottle our honey on a small scale. We have been using our micro-wave oven for over a year now using a one gallon plastic jug without a lid on it containing 12 pounds of honey. We use the temperature probe control. We set it at 120 degrees for seven minutes. This makes the honey the right consistancy for bottling quickly and with no adverse affects at all to the flavor or the natural state of the honey. You can also reliquefy one pound of granulated honey in the micro-wave oven (or one gallon). It takes two minutes at 120 deg. for the one pound or seven minutes for the 12 pounds at the same temperature. Use no lids on glass or plastic containers of honey. The honey comes out perfect and delicious.

This is another step forward in the progress of better honey processing. Depending on the wattage output of micro-wave ovens, which may vary, the timing may also vary. Take honey out every three minutes and use a candy thermometer until 120 degrees is reached. This will determine your oven's timing capacity.

Daniel and Patricia MacDonell
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Queens

Dear Editor,

I would like to comment on the excellent article by Dewey Caron "Free bees" in the May issue. There was one item I didn't agreee with. When he talks about trapping, he says "Now you must give them a queen or a frame of brood from another colony to rear a queen". I believe that you will end up with a lousy queen when you just "give them a frame of brood."

The only writer who has touched on the problem in the last few years, to my knowledge, has been Mr. Steve Taber. I hope I may qoute from his article in Feb. 80 *ABJ*. In "Bee Behavior" page 83 column 2 he says: "A queenless hive with eggs and young larvae usually will rear queen cells. They start from 20 to 40 or more cells. The oldest larvae (and the one that will probably give the colony the poorest queen) comes out first". Now that should be read by everybody 2 to 3 times so it will sink in.

If I may quote from *Beekeeper's Folly* a book by John R. Ratcliffe, page 133: "To make sure that cells are not raised from too old larvae, it is usual to examine on day 4 and destroy any which are then sealed". From the same book, page 144: "Clearly, the queen raised from a four-day-old larvae will be inferior to one fed throughout the larval period as a queen, but when a stock starts cell-raising in a panic through the loss of its queen, it is precisely the virgin raised from the oldest larva which emerges first, unless we take preventive measure and destroy the sealed cells containing superior queens-to-be. Pick up at random four or five different writer's instructions on simplified queen rearing and you will almost certainly find one or more which omits to tell you "On the third day after removing the queen destroy any queen cells found sealed". This relatively simple precaution ensures that the remaining cells must have been started on larvae not more than twenty-four hours old".

So please, never again, "let the bees raise their own queen", one of the basic wisdoms of beekeeping!

Gerhard K. Guth
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The Other View

Dear Editor,

After reading "Siftings" written by Charles Mraz in the May issue of *Gleanings*, I felt some additional comment was necessary. Though currently employed by a large, internationally known chemical company, I also consider myself a beekeeper, having owned and operated 160 colonies until 1980 and presently owning a smaller amount.

The author made the statement: ". . . . every pest on crops can be controlled by non-toxic biological methods of many kinds . . . .". It is essential to carefully define "control". Is 50% or 70% or 95% control accetable? Given our current economic conditions and consumer preference, producers are forced to achieve 95% or better control in order to remain in business. Unfortunately, most biological control agents are not this effective and must by supplemented with pesticides. Another important fact, which should not e overlooked, is that many of our major insect pests are not native to North America and were introduced here by accident. As such, they do not have natural control agents here and must be controlled by pesticides.

Growers and Producers of agronomic crops would certainly discontinue use of pesticides, if acceptable and reliable biological controls were readily available. They, like beekeepers, are faced with rising production costs and shrinking profit margins. Pesticides make up a significant portion of their production costs and if they could be eliminated entirely, they would surely do so. Prophylactic pesticide applications are just no longer applied, because they are cost prohibitive. With the development and implementation of Integrated Pest Management Programs, the number of pesticide applications has been reduced and those still applied are better timed to maximize pest control.

Since the inception of E.P.A., the number of new pesticides reaching the market place has been greatly reduced. In 1979, the last year for which complete figures are available, 86, 729 new compounds were screened by Pesticide Manufacturers, but only six received E.P.A. registration. It now takes approximately 7½ years from the time a product is synthesized until it receives its final E.P.A. registration for use in the marketplace. During this time, extensive studies are run on human health risks, pest control effectiveness, effect on predators (as well as bees, birds and fish) and how it will interact and decompose in the environment. If a product should look questionalbe in any of the above areas, it is unlikely it will receive a full E.P.A. registration. This is a very costly procedure. A total of $203,202,000.00 was spent in 1979 by Pesticide Manufacturers in

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HONEY FOR HEALTH

Questions and Answers

Q. I have researched all of my collection of beekeeping books and old issues of *Gleanings*, and can't find the answers to a couple of questions. I hope that you can help.

The first concerns the use of Division Board Feeders. Where do you put them for spring or fall feeding of the colony? How many do you use per hive — one, two or more? Do you put them in the brood chamber or the food chamber? In the middle of whichever chamber or to the sides?

The second question concerns the use of mouse guards (a la Maxant stainless steel variety). Does one leave the mouse guards in place the year around? Or does one place them in the fall — and if so, when? Would their use during the summer interfere with the fanning of the colony and stores? N.D., Colorado

A. In answer to your question regarding the division board feeders, they are made to replace either one or two frames in a hive body. They are usually used in a top or food chamber for convenience in filling and may be either of the 6⅝" or the 9⅝" depth. Usually they are put next to the side wall of the hive body.

Most mouse guards are left in place the year round. If the wire mesh is so course that it does not interfere with the passage of the bees. If the mouse guard is a solid bar with perforations, such as small holes it many be necessary to remove it during the summer and replace it in Sept.-Oct.

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Q. I have some shallow supers of honey that I treated for wax moths using paradichlorobenzene (moth crystals). The supers are stacked with a fine screen over top. Can this honey be used for human cooking and table use? Can this honey be fed back the bees? W. G., New York

A. The shallow supers of honey which have been treated for wax moth are satisfactory for feeding to bees but we do not recommend that they be extracted of their honey. Incidentally, rather than a fine screen your treated supers should be covered with a solid cover to retain the vapor formed from the moth crystals.

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Q. I have honeybees and am wondering about chestnut trees that bloom. We have had trouble the past year with our honey having a different taste that isn't too good. We have heard the chestnut blossom should not be around where the honeybees are.

Would like some information on this, please. G. C., West Virginia

A. We have heard no comments regarding the chestnut trees giving honey a bad flavor. The fact is, we have never really thought of the chestnut tree as yeilding a significant amount of nectar, at least enough to produce honey. I suspect the unusual taste is coming from another floral source.

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Q. In cleaning up dead hives this spring I came across some supers with bee excrement in them. I was wondering if anything can be done to get rid of it.? H. R., Ontario, Canada

A. Bee excrement can cleaned up with detergent and water if it is on a flat surface. If frames must be cleaned, a dip in hot soapy water and brushing may be needed. The bees will clean up fouled combs.

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Q. A friend of mine keeps his honey in the freezer of their refrigerator. I always thought freezing would damage the comb honey and turn the honey to sugar. What is your experience? B. L., Florida

A. Placing comb honey in the freezer will preserve the comb and also maintain the liquid state of the honey. In contrast, placing honey in the moderately cold section of the refrigerator, outside the freezer, will cause it to granulate at a very quick rate. The difference in temperatures is the secret, which should be zero or below.

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Q. I have a problem. I received a two pound package of bee on April 27th, 1981. The weather has been quite cool and the first real warm day was last Monday May 18th. The bees have been bringing in pollen for some time, so I suppose the queen was laying. She was laying alright, but all drone eggs.

When I looked into the brood nest all I found was drone brood. I got a queen cell from a friend and put it in the hive last Thrusday. I looked in on Friday morning and found that the bees had sealed the queen cell fast to the comb.

Would that sealing the queen cell be a sign that I have no laying workers? Could the drone laying queen still be in the hive? I have looked for the queen a number of times, but so far, no queen. The bees are dwindling fast now. I doubt if I have two quarts of bees left. They are still bringing in some pollen. Would it be possible the queen is still in the hive. R. C., Michigan

A. What happens to the queen cell will determine the probable status of your colony of bees. If the queen cell is destroyed quite likely there are laying workers in the hive, or it has a queen. The period between the installation of the package and May 18 is a rather short period for laying workers to become established although it is possible. Evidentally the original queen was a drone layer and consequently the bees were unable to raise a new queen from the eggs which she layed. In any event, it is good possiblility that the colony is now beyond recovery and should be untied with a queen-right colony to salvage the remaining bees.

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Q. What nutritional value does pure royal jelly have on humans, and what milligrams should be taken daily? J. C., Georgia

A. We can give you very little information about royal jelly in relation to nutrition and health as most of the information comes out of Europe and the Far East. We do receive publications which report on the use of this substance in Europe. Many apparently doubtful claims were made for the nutritional value of royal jelly during the 1950's and 60's. Most have not

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QUESTIONS AND ANSWERS

(Continued from page 374)

been substantiated by medical researchers. It has since declined in popular use but of course this does not necessarily indicate that it has no nutritional or medicinal values.

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Q. At present I am a sideline beekeeper with apsirations toward commercial beekeeping. I also farm on a small scale. I am trying to find a crop I can harvest for hay and also get honey from.

Last year I tried Hubam sweet clover without much success. Much of its failure I attributed to drought, so I'm trying again this year. It's just now sprouting and hopefully it will do well. However, Clemson University say Hubam won't do well here. We'll see.

What the extension service did recommend was hairy vetch. I as told it can be cut for hay and that the nectaries are such that it should yield honey. Is hairy vetch a good honey source? A. N., South Carolina

A. I think your success with Hubam sweet clover will be better this year, especially since most of the seed is produced in the South where the growing season is longer. Very little hairy vetch is grown in the northern states but it is a popular honey crop in the far west such as in Oregon. In some areas, it may be a better nectar source than in others so it usually becomes a case of whether vetch is productive in a particular area. To detemine this, you would have to try a sample planting of this to check the production of nectar.

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Q. Every year bees nearly ruin a crop of snapdragons in outdoor beds. The florets fall after the pollen is removed. I have been told you may be able to tell me how to keep the bees away.

Is there a substance that will repel them? What can you advise? C. C., Maine

A. Nearly all of the efforts of the beekeeping industry have been devoted to making flowers more attractive to bee rather than developing a repellent, although there has been some work on repellants combined with insecticides to keep bees away. For this reason you will understand that very little research has been conducted along the line of developing either a chemical, a natural substance, or a device for the purpose which you desire. The only 100% effective device, sometimes used in field experiments, is to place a bee-proof screen over the flower bed.

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Q. I've been taught that sugar syrup will not raise brood. Sugar syrup is for keeping bee alive and for drawing wax combs. Am I righ so far? With little or no honey in the hive, before the fruit bloom in May, is it possible for the bees to build up to swarm, say three times on sugar syrup alone? The feeding of sugar syrup was from Jan. to May 1st. R. B., Rhode Island

A. In general, it can be said that sugar syrup is satisfactory to raise brood. This may be in disagreement with what many beekeepers believe but laboratory tests confirmed the suitablility of feeding sugar syrup for raising bees. There is a possibility that the longevity and other factors relating to the life cycle of the bee may be affected and perhaps making it secondary to honey as the most satisfactory food. Sugar feeding is often supplemented by natural nectar and pollen which makes up for deficiencies that may occur.

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Q. Recently we had a massive kill to one of our hives. One morning about two thirds of the population lay dead outside and inside the hive. When I opened the lid most of the live bees were standing on top of the frames fanning with their abdomens in the air. They acted lethargic, crawling onto my hands only to fan some more. There was no evidence of disease, but the brood and larvae appeared dried up and uncared for. There were no dead wasps or yellow jackets in the pile of bees and poison does not seem to be a factor as nine other hives in the same yard are unaffected.

I gave them a frame of brood from another hive and some sugar syrup. The next day they were revitalized and I saw the queen in the hive. There have been no great number of bees dying since then although it was three days before they started to eat the syrup or bring in any pollen.

Do you have any ideas about what might have caused this sudden, seemingly temporary, disaster for the colony? R. C., California

A. I can come up with no other explantion other then insecticides. Perhaps the scout bees from only the one affected hive found the nectar or pollen source which was contaminated. The reaction of the bees and their subsequent recovery both indicate a chemical poisoning.

Strictly Backlot

By CARL CALLENBACH
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ONE OF THE unexpected pleasures of having my fifteen or so hives scattered around in three backlots is that I've met some good people and a couple of fine friendships have developed. I am writing in particular about Harry Poorman and his wife Caroline who, about six years ago, called about a swarm of bees in their backyard. I now have five hives along a fence row behind their house and a 50 ft. x 75 ft. garden in back of their orchard. Last week we spent several days at their cabin in Sullivan County, a nice mix of putting up board and batten siding, loafing in front of the fireplace, and driving in the magnificent mountains, following Loyalsock Creek and feeder streams.

Sullivan County has one of the smallest county populations in Pennsylvania, around six thousand, I believe, and the county seat, about a mile from Harry's cabin, has a citizenry numbering around 250. Like Potter County ("God's Country, USA" — read the bumper stickers), to the northeast, Sullivan is famous for its deer herds and during hunting season the cabins and hunting camps lining the roads and streams bounce, and the motels and gin mills (as Harry calls them) gorge on hunters from Philadelphia and Jersey.

Harry and Caroline, who have been hunting these woods for thirty years, drive us through the mountains and we are given a running account of who shot an eight-point buck here, or who missed a trophy buck there in the cluster of beech trees — beeches

abound in these mountains, and maple if one can believe the "Maple Syrup for Sale" signs, but it is the beeches and their seedlings and nuts which supply food for the deer and wild turkeys (Harry has tried to establish hickory and oak, gave his hunting friends pockets full of acorns and hickory nuts to heel in on their drives for deer, but to no avail — and wasn't it hell to drag that buck down the mountain, through the swamp, then up to the road! But mostly we see fisherman, now, along the Loyalsock near a cabin owned by an absolutely crazy bunch of hunters from Reading, PA, who, "Thank God, depart the premises after the season is over!" The creek is high — we've been getting some much needed rain — so the fishing can't be good. But if you're from Jersey or Maryland, witness the license plates on cars parked beside little log cabins in Worlds End State Park, you can't wait until the creek is ready.

After our excursion we resume hammering boards on the exterior of the cabin. We talk about the local population: What exactly do they do to survive? We'd seen three kids — girls — running a back road, in shorts and sweat shirts they looked to be in training, on the track team of the only high school in the county. "Probably can't wait to get out of here," I'd said to Harry. "You're probably right. The ones who stay work in lumber related jobs, mostly," he answered. "Some of the ones who leave come back to retire. It's a hard place to get completely out of your system."

In a fantasy I have periodically, I pack up my bees, my rototiller, my banjo, and my typewriter and head for a place much like Harry's cabin, near Worlds End, Sullivan County.

More On Observation Hives: Observation hives are educational and entertaining, no doubt, but for the backlotter who needs only a small number of new queens each year (and who enjoys messing around with nucs and things) I suggest that a three-tier observation hive in which a "proven queen" is kept, is a relatively simple and inexpensive source. The keeper of an observation hive must, if she or he is responsible for controlling swarming, reduce the number of bees in the hive 3 or 4 times each summer anyway, so why not start nucs which will produce a queen having some, at any rate, of the qualities of the queen in your observation hive?

The first step is to be as sure as possible that the queen in your observation hive is a good one. Several years ago I took the queen from my most productive hive (a queen which was marked, luckily) and placed her, frame, egg, brood, bees and all in the lowest tier of my new three-tier observation hive.

The second step, as I noted before, is necessary, anyway: Reducing the population in the hive. Beginning in April, I have to control the number of bees in the hive by removing the top two frames of bees (with the queen trapped in the lowest tier). I then have the option of adding the frames of bees to a nuc already queen right, or I may start another nuc. If I choose the later, the two frames with bees, egg, brood, honey and pollen are placed in a small nuc with one or two frames of drawn foundations. I reduce the opening to one inch and feed syrup for two weeks using an entrance feeder. (I don't use an entrance feeder around my backlot hives because of robbing. Here, on the upstairs backporch, robbing is not a problem.)

The bees in the nuc build queen cells, the cells hatch, and a new queen mates with local drones.

If I need two queens, I inspect the nuc after I'm sure the queen cells are capped, and carefully check to see if there are cells on each of the two frames. If so, I separated the frames and place each into a divided nuc box (with separate entrances) and hope all cells hatch and the surviving virgin queens mate successfully.

Sometimes cool weather is a factor that must be considered. I place an adapted nuc with partially screened bottom over a strong hive with a screened inner cover hole. A regular hive body can be adapted to house three compartments or nucs (with separate entrances and placed over a vigorous hive, separated with a double-screened inner cover. Heat from the bees below the inner cover rises and enters the nuc or adapted hive body.

This backlot method would appear to insure a lengthy, productive life for the queen kept in the observation hive because her egg laying is controlled by the limited amount of frame space. I suggest, however, that to insure her health during the cold months, that the three frames of bees be placed in what I call a small three-frame observation nuc. The glass sides of the nuc permit observations (and as I've said before, a peek in February peps up the spirit) but more to the point, the three frames resting side-by-side facilitate clustering. I also suggest, as I've illustrated with pictures in previous columns, that the nuc include a screened hole large enough to hold a pint feeder. This provision and fiber board insulation covering the glass sides have kept my queen and bees in good shape through numerous Pennsylvania winters.

Beeswax Part II: Candle Making

By DR. ROBERT BERTHOLD, JR.
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Introduction

ONE OF THE many uses to which the beekeeper can put his surplus bees' wax is in making candles. Beeswax candles burn longer than those made out of paraffin, and they also produce a pleasant scent. You can use them yourself as decorative items, they make much appreciated gifts, and we have found a ready market for them with the general public.

Part I of this two part series on beeswax dealt with the obtaining, purifying, and some non-candle uses of beeswax. This article will deal with some of the ways that beeswax can be used to make candles.

Preparing the Wax

Cleansing. In order to produce a top quality candle that burns cleanly with a minimum of dripping, sputtering, and smoking, it is necessary to make sure the wax is completely free of contaminants such as honey and

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BEESWAX PART II: CANDLE MAKING

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propolis. A number of things can be done to help achieve this. By using wax rendered from cappings, the propolis problem is reduced. If the cappings are then washed repeatedly with cool water to remove the residual honey, a light colored beeswax will result. After then fine filtering the wax discussed in the earlier article, the wax should be boiled in water for 10 to 15 minutes (Figure 1). We have found that no matter how clean the wax appears, only the boiling in water will completely free it of unwanted contaminants.

Figure 1 — Purifying beeswax for candle making. Beeswax is boiled in water to remove any contaminants such as honey, pollen, and propolis that are not removable by usual filtering methods.

Figure 2 — Melting beeswax. Spouted wax pot in hot water bath.

Bleaching Wax. Sometimes beekeepers are interested in lightening the color of their beeswax. From the standpoint of candles made from capping wax, most people are suspicious if the proported beeswax candles are not a lemony color. From the standpoint of making candles from our darker wax, we generally use this wax for making colored beeswax candles, as will be discussed later on. Various methods have been used to bleach beeswax from the early Greeks use of sea water and the sun light to current commercial methods using various types of chlorine compounds. It is also reported that the addition of small quantities of oxalic acid to melted beeswax will lighten the wax's color. We have never gotten involved in the bleaching of wax, due to the dangerous nature of the substances generally used. We also suspect that some of these compounds may become incorporated in the wax and subsequently released into the air when the candles are burned, creating a potential health hazard.

Candle Making

Wicking. Due to its weaving and chemical treatment, commercially made candle wicking should be used as opposed to using string. The type and size of wicking needed varies with the diameter of the candle and also, to some degree, as to how you prepare your wax. From the standpoint of a "standard" 10½" high ⅞" base tapered candle, 2/0 (30 ply) wicking should produce a relatively dripless candle. We have also found that a 6/0 wick works relatively well with a 2" diameter candle. Due to variations in beeswax, if your candles do not burn to your satisfaction, experiment with different sized wicking.

Melting Wax. Since melted wax is highly flammable, extreme caution should be exercised in handling it. We suggest you use an electric heat source such as an electric stove or an electric hot plate as opposed to an open flame when melting wax. Except where otherwise specified, your candle making wax should be melted in a container placed in water hot enough to melt the wax (we generally allow the water to reach the boiling point, but we use the wax as soon as it is completely liquified, about 165°F.) The use of the hot water bath (Figure 2) gives an added margin of safety from the standpoint of fire; does not cause appreciable darkening of the wax which can occur with higher temperatures, and places the wax at a temperature which lends itself well to molding.

Rolled Candles. Candles rolled from thin sheets of beeswax, although not long lasting from a burning standpoint, can be quite decorative. These can be made from standard non-wired beeswax foundation, from beeswax foundation which has been purposely colored for candle making by the manufacturer, or by making your own thin sheets of wax. You can make your own sheets of uniformly thick wax by using a shallow pan of the dimensions that you want your final sheet of wax to be. Add about ½" of water to the pan heating this to about 165°F., and then add melted beeswax to the surface of the water until the desired thickness is achieved. Once the wax has solidified, it can be freed from the pan by using a sharp knife or by warming the pan. You will then have a sheet of wax of a uniform thickness.

To roll a candle from any of these sheets of wax, be it homemade or purchased foundation, be sure the wax and the place where it is to be rolled is warm (80°F. seems to work well). Cut a proper length of the correct sized wick for the finished candle and carefully begin to roll up the wax sheet incorporating the wick. The most difficult step in the process is the first turn, after that, it becomes progressively easier as more and more turns are completed. If you want to produce a tapered rolled candle from a standard sheet of foundation,

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"You can always tell when Jones is in his bee yard—he uses lots of smoke."

(Continued from page 380)

your wax sheet should be cut as shown in Figure 1.

Hand Dipped Candles. Candles can also be made by repeatedly hand dipping a length of the proper sized wick based on the planned diameter of the finished candle. To produce a candle with a standard diameter base (about ⅞"), it will take between 30 and 35 dips.

The container which is going to hold the melted wax for dipping should be at least two inches deeper than the maximum length dipped candle you plan to make. This reduces the number of times that you have to add wax as it builds up on the candle; allows room for the wax to rise in the container as the candle is dipped; and eliminates the possibility that the base of your candle will become contaminated with any foreign material that may collect in the bottom of the container.

A simple container can be made by cutting the top out of a clean commercially made water tight metal food container of the desired height. This can then be filled with wax and placed in a hot water bath. Some people have also adapted other types of containers with thermostatically controlled heating elements. In the United States a small scale self-contained electrically heated dipping outfit is available. (See information at the end of the article.)

For most beeswax, the ideal dipping temperature for the wax is about 165°F. For small scale dipping, wick of the proper size and length is dipped in the wax and as soon as it is removed from the wax, it is stretched straight. Repeating the dipping, stretching process a few times will result in a wax coated wick which is rigid and straight. Dipping can then continue allowing the wax to harden after each dip until the candle reaches the desired thickness. The two major problems we have encountered when making dipped candles are: 1.) not allowing enough time for the candle to cool between each dip, resulting in a candle tapered at both ends, and 2.) attempting to carry out this process where there is some movement of air (such as out-of-doors) which causes the candle to take on a "sculptured" appearance.

The number of dipped candles that can be made in a given time period, even with a single candle dipping set-up, can be increased by attaching a number of wicks to unfolded paper clips. By then stretching a thin piece of wire or of cord across your working area, you can dip a large number of candles in sequence by hanging them on the wire or cord using the "S" shaped paper clips, while each is cooling.

For yet a larger scale production of dipped candles, a larger container of wax can be used. Some type of racks that the larger container will accommodate can be made-up to suspend multiple wicks and these can then be dipped, allowed to cool, and redipped in succession.

It is also possible to hand dip poured candles to give them a hand dipped appearance.

Molded Candles. A variety of artistically innovative candle molds are available in which beeswax can be used. Here we will discuss the making of molded tapered beeswax candles, though many of the ideas can be used in the making of other types of molded candles.

In addition to properly prepared beeswax and the proper size wicking, a number of other things are needed to make molded candles. Item one is a mold. Antique tapered candle molds can sometimes be found, but often they have deteriorated to the point where they are no longer functional. There are also new tapered molds available, and one source of these in the United States is listed at the end of this article. The mold should be clean, and although some candle makers recommend coating the inside of the mold with a thin coating of silicon, oil, or other anti-stick substances, we have not found this to be necessary with new molds.

Wax Pot. Many types of melting pots can be used in conjunction with the hot water bath. We have found that a spouted tea pot works very well, in that the stream of molten wax can be poured directly into the tapered tubes of the mold. (Fig. 2).

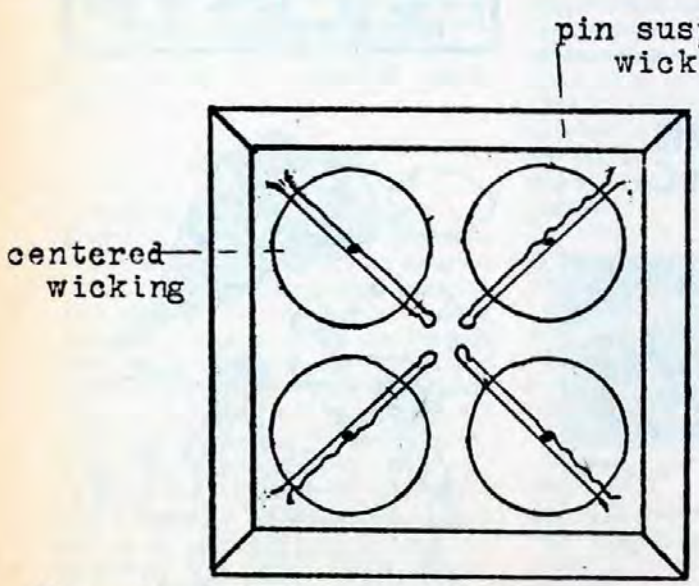

Fig. 4. Top view of candle mold showing positioning of wicking on pins.

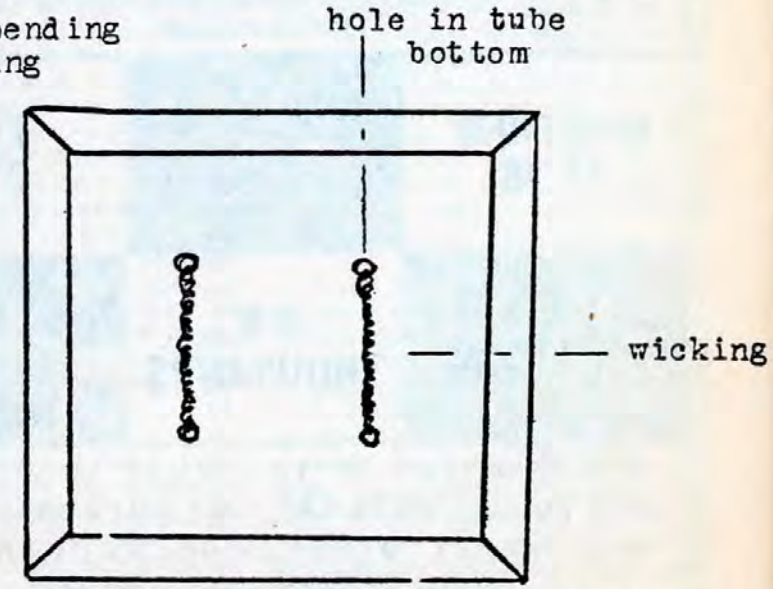

Fig. 6. Bottom view of candle mold showing position of wicking.

Women's bobby pins are an excellent thing to use to suspend the wick in the molds; a ¾ inch thick piece of household sponge cut to fit the base of the mold when dampened with cold water is an excellent means of preventing the liquid wax from escaping from the tips of the mold tubes; working on some type of kitchen tray or cookie sheet also works nicely to catch any accidental drips or spills.

While the wax is melting, cut the wicking into pieces long enough to extend down one tube of the mold, across the bottom, and up the second tube with approximately an extra inch of wicking extending above the top of each tube (Fig. 5). The wicking can be threaded most easily through the tubes by taking a piece of thin relatively stiff wire (wire such as used in reinforcing foundation in frames) and twisting a loop in its end. The wire is then easily threaded through the tube, the wick threaded through the loop, and the wick then pulled through the tube with the wire. Thread the second tube in the same manner, making sure that about one inch of wicking extends above the top of the two candle whole tubes (Fig. 5).

Grasp both the one inch wick extensions and tautly support each wick down the center of each of the tubes using the bobby pins. (Fig 5). Now place the cold water moistened sponge on the drip tray, place the base of the candle mold directly on the sponge, press the mold FIRMLY DOWN ON THE SPONGE, and pour the melted beeswax just to the top of each tube. (In the past, some people have filled the mold completely to the rim, only ot find that it was much more difficult later to remove the candles and to trim the bases of the candles.) The cool damp sponge causes the hot wax to solidify in the tips of the tubes (Fig 5) preventing the remainder of the molten wax from excaping from around the wicking. The tray will catch any drips and the occasional leakage of wax around the sponge.

After a minute or so, the wax will solidify in the tips of the tube, and the mold can be lifted off the sponge and set on the tray. As the wax cools in the tubes, it will contract. As this occurs, more melted was should be added until the tube is again filled to the top. This may have to be repeated two or three times to produce a candle with a solid base.

Once you have completed pouring and the wax has begun to harden, the bobby pins can be removed and the excess wax above the tops of the tapered tubes can be scraped off while it is still soft.

The mold containing the candles should then be allowed to competely cool. This cooling can be hastened by placing the mold out-of-doors during the cooler times of the year or by placing it in a refrigerator or a freezer (once in a great while this "artificial" cooling will cause a candle to crack).

To remove the candles from the mold, the mold should be turned over and the wicking running from the tip of one tube to the tip of the other tube should be cut in the center (Fig. 6). Sometimes by simply tapping the mold on a hard surface, the candles will release. The candles can also be removed from the mold by grasping the one inch length of wicking extending above the top ot the mold using a pair of pliers, and by then tugging on the wick while holding the tube of the mold under running hot water.

Finishing Candles

Bases. The excess wick from the candle should be trimmed off. In the case of the dipped and poured candles, their bases can be finished by either trimming them with a sharp knife, or by inserting the bases of the candles into a ⅞" box wrench which is held on a hot plate using a heavy

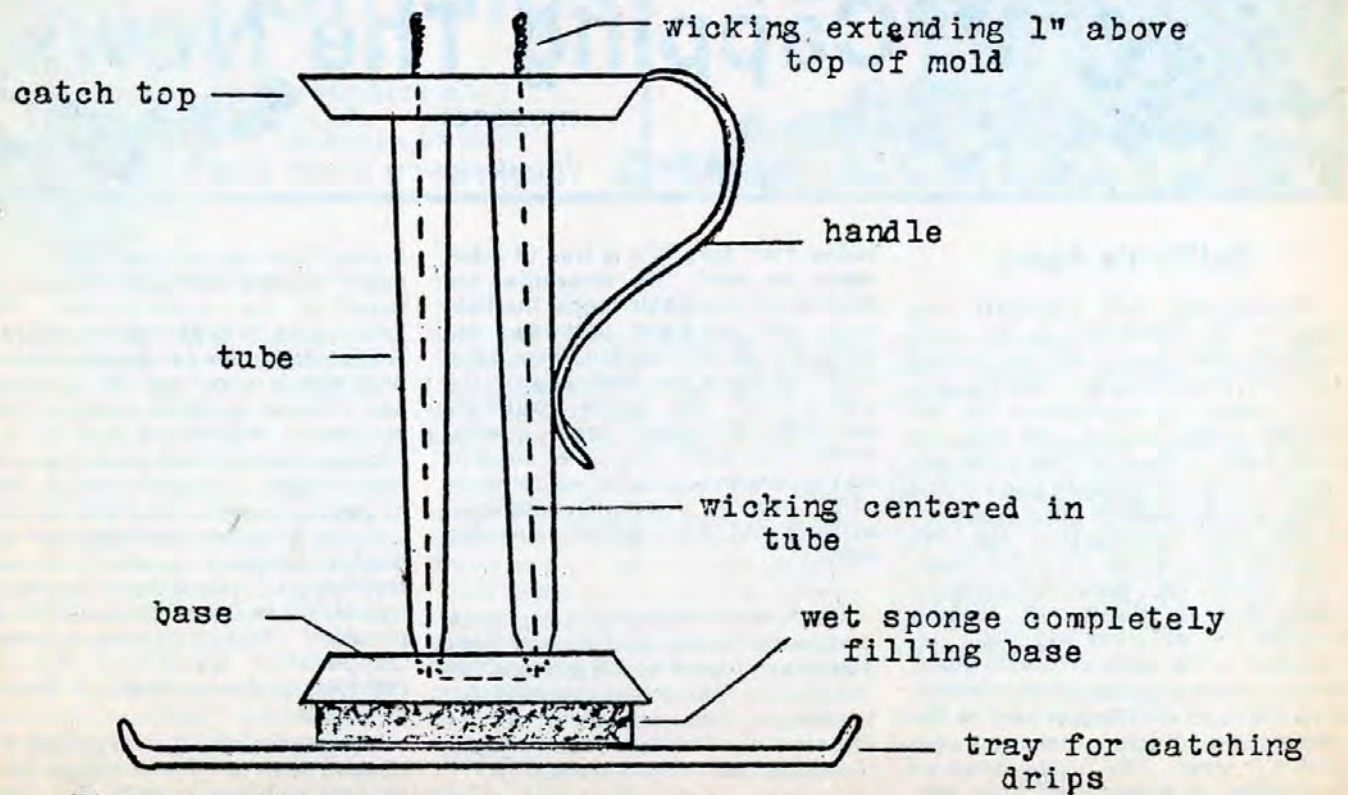

Fig. 5. Side view of candle mold showing position of wicking and sponge.

weight (Fig. 7). This latter method will produce a professional appearing fluted base on the candle.

Coloring Beeswax. In addition to the normal yellow beeswax color, many people prefer colored beeswax candles. Beeswax can be colored using a number of different types of commercial wax coloring agents, which are available in many hobby and candle supply shops.

Satin Finish. A very attractive satin finish can be applied to the surface of either a dipped or poured candle using the following method. Fill a container a little taller than the candle with water allowing about one inch for a layer of wax on its surface. Heat the water until the wax is melted. Immerse the candle until it is completely below the surface of the wax, then withdraw it. You will have to experiment a little until you get the desired effect.

Polishing Candles. Often when beeswax candles are stored for a period of time, a "dusty" appearing substance called "bloom" forms on their surface. The bloom can be removed, and the candles can be brought to a bright luster by polishing them with a piece of cloth.

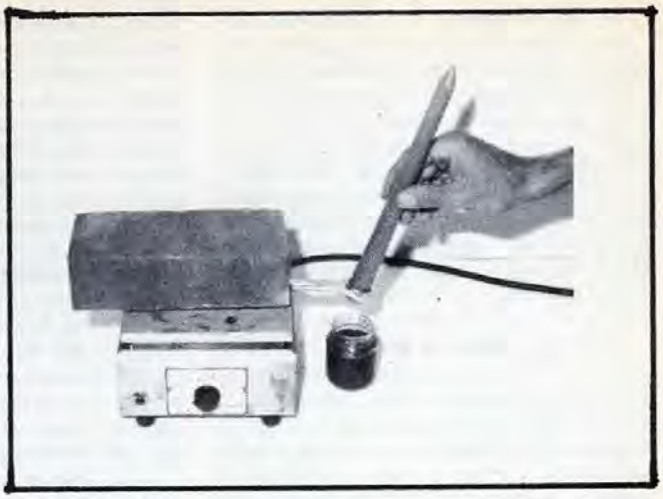

Figure 7 — Finishing candle base. Base of candle is fluted by inserting it in a ¾ inch heated box wrench held on a hot plate with a brick.

Additional Sources of Information on Candle Making and Candle Making Supplies.

Newman, Thelma R. 1972 *Creative Candlemaking*. Crown Publishers, Inc., 419 Park Ave. south, N. Y., NY 10016 1976 paperback price $3.95. An excellent book.

Deer Creek Wicks, P.O. Box 8934, Cincinnati, Ohio 45206. Wicking in bulk. Price list upon request.

Mr. George Arold, Orvilla and School Roads, Hatfield, PA 19440. Mr. Arold carries a complete line of candle making supplies.

Electric Dip-Master for making hand dipped candles. Mrs. Norma Heine, Rt. 7, Box 517, Fairmont, West Virginia 26554.

Antique mold reproductions are available from Dr. Berthold, % Delaware Valley College, Doylestown, PA 18901.

Capping The News

THE EDITORS

"Beekeeping Small Talk"

California Again

TRAVELING THE LENGTH and breadth of California, as we were recently privileged to do, one cannot fail to be impressed with the diversity and extent of agriculture in the Golden State. Having just returned from a second tour of California and our fourth to the western parts of the Continent we wish to once again express our appreciation for the hospitality received from the many new friends we were fortunate to meet in our travels. As visiting beekeepers we were especially interested in the state of development of the beekeeping industry in California. Bees are an integral part of the enormous production from the fruit and nut trees. The future need of pollination is emphasized after seeing extensive new plots of young trees as we drove through the central valley. I am sure this is true of other areas as well. The vineyards, the specialized vegetable crops, the field crops and the diked, patterned rice fields are all well tended. Bees, both from California and from beyond the borders of the state routinely pollinate almonds, seed alfalfa, plums and prunes and other more of less extensively distributed crops as cotton, kiwi fruit, cherries, safflower, apricots and the assorted vegetable crops.

California beekeeping is supported by both cultivated and natural floral sources of nectar which produce, not the highest per colony average, but the largest total volume of all the states. Only Florida, in some years, threatens California's leadership.

Californians move fast, not only on the highways but in adapting new life styles. This can also be said of the use of modern techniques in land use relating to agriculture. The beekeepers, too, recognize progress is essential to the full development of their state's resources. The California bee industry is led by some highly successful individuals and is supported by research at several leading universities. This leadership has helped to advance the science and practice of queen and package production, honey production and pollination technology. Research leadership is linked to practical application through an outstanding Cooperative Extension Service centered at the University of California, Davis.

Geographically, California is not blessed with a uniform topography; or, with equable rainfall. The great central valley, now so highly productive, was essentially a desert until

water was channeled in from the Sierra Nevada mountains. For the beekeepers a limited amount of forage is available in the dry Sierra Nevada and Coastal mountain foothills, although this can vary with the season, mainly dependent on the amount of rainfall received during the fall months. Perhaps more consistent are the yields of honey collected from the cultivated crops to which bees are moved throughout the season. Bees are moved to the citrus groves, alfalfa seed growing areas and other specialized locally grown crops; or, to areas where sage, star thistle and other naturally growing plants extend the harvest season. Bees are transported into the foothills of the eastern and western mountain ranges and even to the dry desert regions where they pollinate cultivated crops and gather honey from plants which are irrigated or are adapted to the low rainfall. Sage, wild buckwheat, alfalfa, cotton, blue curls, star thistle, citrus and various combinations of these California honeys are marketed by producers. Nectar and pollen for colony build-up comes from eucalyptus, manzanita, willow, mustard, acacia, radish and other flowers.

Abundance is the rule in this blessed land. We met with invitations to "help yourself to the oranges" and "pick as many of the cherries as you wish, otherwise they will go to waste." One is inclined to believe that generosity is the secret of abundance in the Golden State.

Swarming

From all reports swarming was at a record high this spring. A high overwinter survival rate and a favorable spring buildup period contributed to unusually high colony populations early in the year. Much swarming was the natural outcome. Swarming can considerably reduce the capacity of a colony of bees to store a surplus of honey. While swarms lead to many interesting encounters between beekeepers and the public the general outcome is that swarms of bees are regarded as at least a minor nuisance by the public; as a real hazard by a sensitive few. Swarms settling in backyard trees are seemingly most common due to their high visibility while they await the return of scouts seeking a new residence. Swarms entering house walls are of the greatest concern to the homeowner. Beekeepers are best advised to refer these concerned people to an exterminating service unless extensive experience with this type of swarm collection is possessed by the beekeeper called. Otherwise, collecting free hanging swarms of honeybees can be both of useful and rewarding experience.

Bee Products

Few days pass that we do not receive an inquiry regarding the benefits of honey and pollen in the diet and the benefits of propolis and venom in therapy. We regret that we cannot make any difinitive statements in this regard. While our thinking is always positive in regard to most reasonable claims we cannot agree with some past and present claims that originate from obviously irresponsible sources. Whatever we communicate must have a reasonable basis in fact unless stated explicitly to be of a speculative or unproven nature. For answers to questions we must defer to the axiom "Good health and good sense are two of life's greatest blessings" (from Plubius Syrus).

Siftings

By CHARLES MRAZ
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PAGE 254, May 1981 *Gleanings*, Dr. C. Carr makes some interesting comments on my Feb. 1981 article on honey in infant feeding.

The medical report on this botulism investigation states specifically that only infants with a long period of constipation became ill. This condition apparently produces the anerobic (no oxygen) environment necessary for botulism toxin production, in the intestines of these infants.

Of the six sick infants studied, only three were "exposed" to honey. Why were the other three without honey exposure also sick? One of the three infants was given a bottle of honey and water on a camping trip. Only one bottle? It does not say. The second infant had honey smeared on its pacifier nipple. How much honey can you smear on a pacifier nipple? The third infant it does not say how or how much honey it was exposed to.

It is important to note, not a single infant in this study was on an exclusive milk and honey formula. Would not an infant that consumes honey every day in a milk and honey formula be more likely to develop botulism poisoning than an infant exposed to it in tiny amount on rare occasion? Why was not even one infant on an exclusive milk and honey formula produced in this study if for nothing more than to compare its health with infants not on an exclusive honey milk formula? The reason I believe, is because an infant on an exclusive milk and honey formula cannot develop botulism poisoning.

Anyone familiar with feeding honey, knows honey is a natural, mild laxative. Milk alone tends to be constipating, a little honey added makes an ideal combination for infant feeding. The bowl movements can be controlled beautifully by increasing or decreasing the amount of honey in the formula.

Refined and artificial sugars usually used in artificial formulas do not have the same laxative effect of natural honey.

Dr. Carr asks for "proof" that natural milk and honey formula is

superior to commercial formulas. The proof is simple, anyone can do it. Take a baby that cannot tolerate an artificial formula; sick, vomiting, diarreah as its body tries to get rid of the stuff at both ends of its digestive system. Give such an infant a bottle of natural milk and honey and almost immediately, as Dr. Clark expressed it, you have a new baby in your arms. I consider Dr. Clark as an expert in this field. He has had infants, including premature "preemies" on milk and honey formulas for many years with wonderful results.

In my previous article I pointed out that the bacteriacidal activity of natural honey depends not only on its concentration and the hygroscopic (affinity for water) of the natural levulose in honey, but to a greater degree the bactericidal property is due to the enzyme, glucose oxydase. This enzyme maintains a level of about 30 parts per million of H_2O_2 in the honey **even when diluted**. The nascent oxygen released by H_2O_2, even in small concentration is a powerful bacteriocide. Heated or processed honey may not contain this enzyme as it is sensitive to heat and can be destroyed or removed by processing the honey.

For thousands of years since ancient Egyptian, Greek, Roman medical literature, the virtures of honey have been extolled for its geat value as a food and medicine. The Bible, Koran and more modern literature up to the present have produced scientific and "folk lore" evidence of its great value in the diet.

It is only in the past few years that the value of honey has been questioned. In the recent botulism article, even its safety as a food has been questioned in infant feeding. Even after 4 thousand years of experience has proven the opposite to be true.

If any research is every done, which is most unlikely, to prove "scientifically" that natural milk and honey formula is superior or inferior to artificial commercial formulas, and evidence proves milk and honey to be superior, such research would never be printed in a medical journal.

No medical magazine can be expected to print such an article when at the same time, the magazine may be carrying several thousand dollars worth of advertising for artificial formulas. The reason is obvious.

Should commercial formulas prove to be superior, you can be sure no time would be wasted to get such evidence printed in every medical magazine.

What makes the whole thing so tragic is that some infants could suffer, perhaps even mental retardation on artificial formulas, as has leaked out in the press not too long ago. Many of these sick babies, that have nothing organiclly wrong with them, could be well and happy again on natural milk and honey.

This is the year for the Apimondia Congress to be held in Acapulco, Mexico in October. This makes a wonderful excuse for a beekeeper to visit Mexico.

Since I have travelled to Mexico for many years, it might be well to give a bit of information to those that plan on going. One subject to travelers to Mexico that gets much attention is the "Tourista Enferma" (Tourist Sickness), "Montezumas Revenge", etc. The usual advice is to not eat anything fresh that cannot be peeled or "sterilized" in some way. That advice might have been valid years ago, but with so many wonderful fruits and vegatables in Mexico, I gave up that advice after my first two weeks in Mexico, years ago.

Chances for these "digestive problems" are no greater in Mexico than in the U.S. It is well to stick to the advice that you only drink "Aqua Potable" drinking water, that is available most everywhere.

Some advise taking pills to prevent the "Tourista" problem. It should be understood that some of these pills can cause serious liver damage. The pills may be more dangerous than the sickness. I have found the best "medicine" against Tourist Enferma is the Dr. D. C. Jarvis "cocktail", honey and vinegar. Mix natural honey and vinegar, half and half into a syrup. I always carry a jar of this with me wherever I go. Morning and night, take about two tablespoons in a glass of water, more of the syrup if you wish. Sometimes I take a couple of spoons of the pure syrup. For me, this has kept the "Tourist Enferma" away for more than 20 years of traveling everywhere in Mexico. Truly a wonderful medicine for adults and infants alike. What we need is more of Dr. Jarvis and "Folk Medicine" that speak with years of experience.

To get a tourist permit at the airport, you must have a passport or a birth certificate. Be sure you take it with you with your airline ticket.

It wouldn't do any harm to learn a bit of Spanish. It may not do you much good, but it is a lot of fun trying. Be sure to send in your application soon as possible. This information can be found in most beekeeping magazines.

No doubt there will be side trips to some of the large beekeeping operations that have 15,000 thousand colonies or more. October will be the start of the Acahual honey flow in much of Central Mexico, and soon after that, the honey flow from Canpanilla on the coast areas, such as Veracruz. We hope they will have a big honey crop to show you.

This is my first trip to Central Mexico in about 7 years and suddenly I realized, yesterday, traveling in many areas, an important part of Mexico is missing. The Zapolates, or Buzzards are missing. I have been here for a week and did not see even one. A few years ago, they were everywhere by the hundreds, soaring for hours in the sky without hardly moving a wing, searching for carrion.

Yesterday, driving along many miles of roads, I saw dead dogs and other animals killed by cars, lying on the road side, bloated, but not a single Zapolote in sight. A few years ago, there would be a crowd of these birds around a carcass, tearing it apart, within minutes after if was killed. Now these dead animals just rot and stink on the roadside.

How could thousands of these birds disapper so fast and so completely? I asked my Mexican friend what happened to the Zapolote. He said sometime within the past 10 years they just disappeared, he didn't know why.

Not a very good omen to be sure. Will we all just disappear like that someday and never know why? It seems to me we should find out why the Zapolote disappeared. We may be next and perhaps for the same reason. So many common birds of years ago, have already disappeared even in the U.S., such as blue birds, medow larks, boblinks, etc. If there is anything we can learn from the past is that all civiliztions seem to have a way of destroying themselves. Before that happens see you in Acapulco in October.

The Collector's Corner

by DARL and IVA STOLLER

By DARL STOLLER
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FOR MANY YEARS bears and honeybees have been associated and even today in many parts of the world bears remain a serious problem for beekeepers.

Dr. Roger Morse has written an outstanding new book *Honey Bee Pests, Predators and Diseases* and he gives a very interesting account of the problems bears give to beekeepers all over the world and the measures that are used by the beekeeper to protect the hives.

In our many years of operating bees in northern Florida, bears were quite a problem to us so we protected our beeyards by electric "bear pen" fence. Even they were not bearproof at all times and it was most disheartening sight to see the damage that the bears could cause if they somehow got inside the bear pen.

One of the most unbelievable events that ever happened to us was in eastern Pennsylvania some years ago. We were loading out three loads of bees in the fall to take to Florida. We left one truck that we had half loaded on a hill back of a farm house, with one pallet of bees on the back half of the truck. The next morning we could hardly believe our eyes, as a bear had pulled a pallet of four, two story hives, off the truck and had completely torn them up. All of this occured within five hundred feet of a farm home, with no trees or any other obstructions of any kind to hide the truck.

Naturally many items have been made over the years with bears and bees in many different sizes. shapes and materials. The pictures show some of the bear items we have found. Many of the new honey pots made today have bears on them somewhere, usually in the lids. It is another facinating part of "honeybee collecting", and may you never find a "real bear" in your apiaries. Happy collecting.

Hand carved wood bears made in Russia

Bears and honey are often seen together in objects of art.

Research Review

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

Colony Defense

WHAT MAKES bees aggressive? The answer to that question is not simple and obviously there are many factors. Recently published data supports some earlier work that honeybees "show their quickest, most vigorous and most long-lasting colony defensive behaviour" when it is hot and humid. Temperatures tested ranged from 26.7° to 35°C. (85° to 102°F.).

While overall aggressiveness increased as the temperature was increased in these tests, higher humidity appeared to affect only the intensity and not the speed of the reaction or its duration.

It must be emphasized that these are not the only factors affecting aggressiveness. Genetics has a great deal to do with the response of a colony to attack; I think every beekeeper will testify that some colonies are far more aggressive than others. The test reported here were laboratory tests so they did not take into account the effects of quantity of food available. It is well known that bees are much less aggressive when food is abundant and foraging is at a peak.

Underlying the questions raised in this research is why African bees in Africa and Africanized bees in South America are more aggressive than their European counterparts. Studies conducted in Brazil have indicated that the same bees are more aggressive in the hotter, more humid parts of that country. The study reviewed here supports that hypothesis. This suggests that if Africanized bees reach the U.S. they would be less aggressive than they are in the tropics.

One must be extremely careful in interpreting this research. Elementary texts on beekeeping emphasize that the best time to inspect a colony is when it is warm and the sun is shining. That recommendation still holds. When it is cool, and bees are not foraging, bees can be unduly aggressive but that question was not dealt with in this study.

Collins, A.M.
Effects of temperature and humidity on honeybee response to alarm pheromones. *Journal of Apicultural Research* 20: 13-18. 1981.

List of Toxic Pesticides Revised

Researchers at the University of California (Riverside) have again revised their most useful lists which indicate the toxicity of various pesticides to honeybees. As they have done in the past, insecticides are divided into three groups: Highly Toxic, Moderately Toxic, and Relatively Nontoxic. There are several new notations that are of special interest. Our experience in New York State has proved that the classifications made in California are valid without exception under our eastern conditions. I recommend the publication to all those who wish to determine the toxicity of materials used in their area.

Methyl parathion is listed in the highly toxic group as is the encapsulated form, Penncap-M® . However, it is stated that "Overall, it" ... Penncap-M® ..." is 13 times more hazardous to honeybees than the EC (emulsifiable concentrate formulation. Penncap-M® is too hazardous to be applied to any area at any time when bees are present in the field or within one mile of the area to be treated."

For the first time, so far as I am aware, this leaflet shows Carbaryl (sevin) in all three categories, depending upon the formulation. This is of special interest since sevin has been a great problem for our industry since about 1959. It is interesting that after more than 20 years we should come to understand that formulation can have much to do with the toxicity of a material to honeybees. We still do not know why this is true.

Sevin-4-oil and sevimol are both listed as moderately toxic to honey bees. Sevin SL and sevin XLR, both relatively new formulations, are in the relatively nontoxic category. All other formulations of sevin remain in the highly toxic group. The form that has given us the greatest difficulty is sevin 80S.

A special feature in this publication is a "honeybee mortality predictor" that will allow users to predetermine what losses might be with various insecticides used under different conditions. Some of the terminology may not be familiar to everyone, but by carefully following the directions one may come up with a good notion of what various material might do.

As is the case with most extension publications, single copies are free by writing: E.L. Atkins, Department of Entomology, University of California, Riverside, CA 92521.

Atkins, E.L., D. Kellum and K.W. Atkins
Reducing pesticide hazards to honeybee: Mortality prediction techniques and integrated management strategies. University of California Leaflet 2883. Revised February 1981.

Bee Talk

By DR. RICHARD TAYLOR
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I'M ALWAYS skeptical when someone claims to have come up with some great new idea for managing bees, but I do think I have come up with a fairly important idea. Of course it is not entirely new — how many things are? But I've never seen it spelled out just the way I am about to do, so at least I'm not just warming over someone else's ideas. I've been advocating it at bee meetings for the past year or so, but this is the first time I've written it down.

First, though we need a name for this grand idea. So I am going to overcome that great modesty, for which I am so deservedly famous, and call this "The Taylor Principle" of bee management. That makes it easy to remember and refer to, and who knows? The name may even go into the permanent literature of apiculture. Though I rather doubt this.

Anyway, here is the idea.

In most good beekeeping regions there are late honey flows. Often these are from goldenrods and asters. The beekeeper always looks forward to these late flows, from whatever source, not only to boost the bees' winter stores, but to augment his own honey crop.

Now the central point of the Taylor Principle is this: **Leave every bit of that late honey for the bees.** Don't harvest any of it. Of course there will sometimes be an exception, namely, when some very distinctive honey, such as buckwheat, comes late, and the beekeeper is especially eager to get a crop of it. But aside from that, you should let the bees have it all.

The point of that is not merely to insure ample winter stores for the bees. There is nothing new to that; every bee book emphasizes the importance of winter stores.

The point is, rather, this: The more honey there is in the hives **in the spring,** the stronger the colonies will be. And the stronger they are, the more honey they will store up, and the bigger your harvest will be. So the honey left for the bees in the fall is really an investment in your next year's crop.

Of course it is natural for a beekeeper, seeing a good strong fall honey flow coming on, and seeing his hives with no supers on them, to think he is missing out on something. The urge is to get supers on the hives and catch that late flow. But don't do it. Not a drop of that honey will be wasted if the bees are allowed to store every bit of it, down in their hives. It will used for colony buildup the next spring, even before anything blooms, and that is the real secret to productive beekeeping.

There are several other advantages to applying this principle, too. For instance, you can dispense with queen excluders. Some beekeepers never use them anyway. But honey, from the previous season, in the top of the hive, and thus under the first supers to go on in the spring, acts as a marvellous queen excluder. Bees keep their brood nest **beneath** stored honey. Therefore, the queen will rarely pass up over combs with honey in them in order to lay above the stored honey.

This principle has still more advantages if you are a comb honey beekeeper, like me. For example, you minimize the problem of having unfinished sections on hand when the season ends. By getting your crop on the first, strong flows, when the weather is warm, you get nearly one hundred per cent filled sections. A fall flow, on the other hand, can come to an abrupt halt, with whole supers of unfinished sections to give you headaches.

Comb honey, moreover, should be marketed before autumn. The demand for it drops off in the fall. And if you have comb honey on hand then, to save over for the next year, you have granulation problems. Those problems are made worse by the fact that it is often the fall honeys that granulate most readily. So once again: Leave all the late honey for the bees.

And finally, the application of this great principle eliminates the need to feed bees. I have long considered the feeding of sugar syrup to bees to be a mark of incompetence. And if spring comes and you find your colonies weak, low on stores and in need of emergency feeding, then you have certainly not managed things well the year before. Again let me emphasize: Your object should not be simply to get the bees through the winter. Your object should be to have colonies that are **strong** in the spring, and thus able to gather big crops. And that means colonies that are very heavy in the fall. Which in turn means that there should be no supers on the hives after the summer flows have ended.

And how big a hive do you need for applying this great principle? Well, if you are raising extracted honey in the north, a standard two-story hive is best, but if you are going for comb honey, one and a half stories is fine, that is, a hive consisting of a regular standard deep hive body plus one shallow extracting super. The bees reduce brood rearing from about the middle of the summer onwards, so as that space becomes empty it can be used for honey storage. Then in the early spring, as brood rearing expands, room is made available by the comsumption of the stores you have so wisely and generously left.

Honey left in the hive is not wasted. It is an investment in the crop to come — a bigger, and better, crop than you could get otherwise.

Notes From The Straw Skep

By BESS CLARKE
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Canton, PA 17724

THERE'S A NEW BOOK out, titled "*Sandcastles*", and the advertisement for it has made me nostalgic. Building sandcastles is an activity with which I've had very little experience. In fact it was during a vacation to a New Jersey beach only last summer that I participated for the first time in the construction of a major edifice.

I was born and raised in the mountains of western Pennsylvania during the depression and our family vacations. such as they were, tended toward visits with relatives. I saw the ocean briefly (would you believe two hours?) when I was twelve, and not again until I was twenty. It wasn't for lack of effort. I must have driven my parents crazy with my dreams. Things didn't change much after I married, either. Life on a farm kept us occupied and vacations were related to beekeepers' activities.

I remember seeing the ocean from the rock bound coast of Maine when, at the Eastern Apicultural Society at Orono, we took a bus tour to Bar Harbor.

Others trips to the shore have been occupied with birdwatching or fishing or hunting for shells.

My time at the beach may have been limited but I've had plenty of experience with sand. My father made a big sandbox for my brother and me, and filled it with sand that had been dried in a kiln. We built lots of structures in that box — houses and forts; dams and rivers and roads. A generation later we purchased a dumptruck load of sand for the creekside where our childern played. To my dying day I'll remember the way that huge mound flatterned out as the neighborhood gang attacked it.

Another memory that goes way back is the sand table in our church nursery. There was a time when every well equipped Sunday School (at least in our area) had one. They must have disappeared about the time of the second World War because, while I worked with childern who played in them, I don't believe that our kids ever had the pleasure of throwing sand at other childern dressed in their Sunday best. Not all progress is bad, right?

For the past couple years we have arranged a family reunion at the beach. The three generations of us share adjacent rooms at a motel and devote some time of sun and sand and such related activities as bicycling and kite flying. So it was that I finally learned to build a sand castle. It's a fine group activity with challenges for all ages.

To take advantage of the basic materials, sand and water, the castles must be built below the high tide line so time is limited to a few hours for each project. Different techniques may be employed. I find that a combination of molding and dripping fits my attention span best; but rows of bricks are classy; and a fine scuplted castle is beautiful to behold. Tools are simple: A bucket and shovel will do the job. It's not a place for fine manicures, but then most of the other stuff I do isn't conducive to long fingernails either.

The poet, Edna St. Vincent Millay summed it up in a familiar couplet:
"Safe upon the solid rock the ugly houses stand:
Come and see my shining palace built upon the sand!"

RECIPE

It seems wise to take advantage of the variety of fresh fruits available at this time of year and serve desserts with a minimum of preparation time. This California Cheese Dip may be placed in the center of a large plate and surrounded with whatever fruits you can collect. You could make individal servings, too, by piling some dip in a sherbet cup and placing bite size pieces of fruit around it. Strawberries, slices of peach or nectarine, bananas, melon balls, pineapple — all are delicious.

California Cheese Dip: 1 package (8 0zs.) cream cheese, ¼ cup milk, 2 tablespoons honey, 1 teaspoon vanilla, dash of nutmeg and cinnamon, 2 tablespoons lemon juice. Blend together and chill. To serve, place in a small bowl and center of a platter surrounded with assorted fruit. Decorate with mint leaves. The recipe makes about one cup.

Honey Dryer

By P. F. THURBER
Kirkland, WA

I DON'T SUPPOSE it is any great secret that many commercial beekeepers have what they call a "hot" or "Arizona" room. The first one I ever saw about twenty years ago belonged to a beekeeper who left his honey pulled too wet in his Arizona room and then took off for Apimondia at Bucharest, Romania. This in itself wasn't harmful but he left the dehumidifiers on. When he returned home about three weeks later you couldn't have gotten the honey out with an axe! Since there was no market for honey floor tiles, he stacked the honey outside with top and bottom screens and plywood on top till the notorious Puget Sound rain and 100% humidity worked back into the honey and it could be extracted.

At any rate Arizona rooms are all built about the same. The honey is stacked on top of a grated floor. Air is blown under and up through the stacks out the top.Then dehumidifiers in the room pick up the moisture laden air which dries the honey out. After several days the honey is dry enough to have a suitable moisture content (between 18 and 18.5%) and extracting starts.

Some people have said that honey that will shake out of the comb is "green" and is not fit for bottling. I don't think anyone having investigated the matter would agree. Honey is a product of nectar acted upon by enzymes and from which water has been removed. In the literature mention is made that incoming nectar is put in a cell. By that time enzymes from the forager and the house bee, who takes the nectar from the forager and then goes to the cells and puts the nectar in one, have been added. Then about every two and a half minutes another bee will suck up the honey and put it in different cells. Each time the nectar is moved additional anzymes are added. Now how much enzyme activity and volume of enzymes is needed? I have not been able to discover, however I have been told that nectar contains adequate enzymes after just two or three days and then all that remains is the evaporation which the bees' fanning causes. Thus there is apparently no need for the honey to be capped if it is dry enough. That I know. One year I had uncapped honey that was about 16% moisture.

Dryer with tray removed.

Bottom view showing fan and air filter.

One commercial beekeeper, Dr. Don Peer at Nipawin, Saskatchewan, Canada showed slides of his operation and one showed 10 commercial dehumidifiers on a wheeled rack. I asked why ten why not have one big one custom made? He answered that he had considered that but if one of the small ones failed at an inopportune time he could still operate with nine, but if he had only one big one and that failed he was out of business until he could get it fixed. He also made a comment that bees could be more productively used to bring in nectar than staying in the hive fanning and making wax.

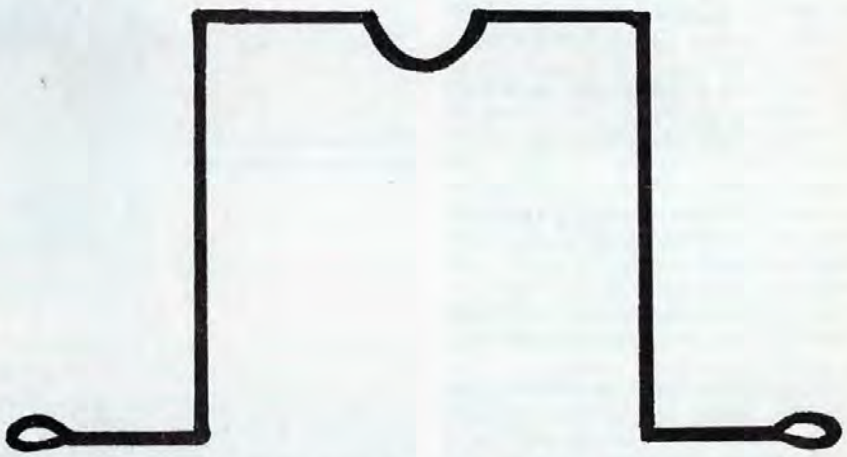
Now the dehumidifiers are not particularly expensive. The W. W. Grainger catalog lists Dayton and White-Westinghouse brands with from 14 pints to 32 pints per day water removed capacities: Wholesale prices plus or minus $200.00 each. So, even a 15 hive beekeeper could afford one which would pay for itself in just two or three years, **but**, small beekeepers generally don't have space in which to build a sealed room. Sure, maybe you could make sort of a tent out of 6 mil plastic and enclose stacks of supers, a fan and dehumidifier but I am afraid your spouse's would object strenuously — so — what to do.

Henri Peter-Contesse here had quite a large food dryer he made. It has slide out bottom screened trays, a heat source, a fan and an air filter. He removed the trays and slid in another bottomless tray 20 inch by 32 inch and stacks wet honey on it. He turns on the fan and the power. He says it works and I believe it did.

You know the monkey see, monkey do syndrome. I had to make one and I am exhibiting the picures. In them you will see I took a heavy duty steel dolly made of 1½ x 1½ x ¼ angle iron with 750 lb. capacity ball bearing casters which have zerk grease fittings for both the swivel ball race and the wheel ball race. The dolly wasn't quite big enough but I made a box nailed on top and no bottom. The sides fit inside the steel frame and the top is slightly oversize because it has to be 20 x 32½ inches outside

dimensions. Since I had a 4 inch fan I used a hole saw to cut out a 4½ inch hole in the center of the top which I then covered with a heavy industrial aluminum foil because I didn't have a piece of thin aluminum or stainless sheet. After nibbling out the hole I surrounded it with a washer which came from an automatic fluid drive cluster. Then I added additional 1 inch x 4 inch's as shown and nailed in triangular pieces of wood as pictured to act as air deflectors. To this I fitted an air filter, held in place with long screws and plywood below. The heaters left over from experiments in which I made up heaters for hives ranged from 85 watt to 135 to 185 to 250 watts. They are made by Hott Watt, Inc., 128 Maple Street, Danvers, MA 01923, and are aluminum sheathed "rope heaters"® . I decided to use two, a 250 watt for low heat and a 135 watt added for high heat with a push-pull switch. Since I wanted to dry out honey and **not** start a fire I made a support of baling wire which I cut and bent as illustrated. I then bent the two heaters into a circle using a 60 lb. honey pail as a bending form and wired the heater to the supports. It was obvious I'd get drips and I needed something to catch them and also I needed something to deflect the heated air so it circulated all through the supers, so I made a combination drip and deflector tray of ¾ inch by ¾ inch wood with aluminum below. The aluminum sheet was actually a piece of a used photo offset sheet — if that isn't the correct terminology, at least it was lugged home from a printing plant. With legs and nails driven through the box sides to keep the tray positioned, I was done.

Dryer Ready to use with tray in place.



Heater supports made out of baling wire. Use 4 bent like this and screwed in place.

Did it work? Well, I took it to a friend who had a dozen 6⅝ inch supers with honey so wet you could get a rain if you held a frame on its side and tapped it. He stacked the supers on the dryer and put pieces of plywood on top of each stack (these pieces of plywood had four holes one inch in diameter drilled about 4 inch in from each corner.) Then he turned on both heaters and fan which is wired in with the 250 watt heater. In three days he unstacked the supers. Puddles of honey which had dripped onto top bars by then had dried so the honey had formed a skin and if touched the honey would string out. Well, he wasn't set up to extract so he left the heaters on for four more days. That was too long! The honey on top of the frames now could be chipped off the top bars and had a leather-like consistancy. Was the honey in the cells drier? You bet! He had a very difficult time extracting. At first combs were broken. Not that they can't be generally pressed back into shape and repaired by the bees, but obviously you don't want to break perfect combs.

Now I can't tell you for sure what heaters to use. You must realize the air is drawn through the carburetor air filter which is only about 3½ inches above a concrete floor which, if you place a thermometer on it will show my friend's basement temperature at between 50 and 55 degrees F. The air temperature is between 63 and 66 degrees F. and 250 and 135 watts in the heater is about right, but you would have to experiment. Also, initially, say for about the first 48 hours you can use both heaters. Then the air coming out of the holes at the top of the stack feels just barely warm, indicating that the honey in the stack has finally been warmed. For the first 24 hours air coming out of the holes is cold as the heat is lost in warming the honey. We think the 135 watt heater should then be turned off and only the 250 watt heater used as the air is circulated for an additional 48 hours. That, we think, should do it. If it doesn't we could stop extracting and let the dryer work for two or three more days until you get the consistancy you want.

As a matter of interest, the heater cost, I think, is under five dollars each. The fan and motor about $10.00, and unless you want to use the dryer as a dolly to store bottles, supers or whatever, casters are not realy necessary. We do think the air filter is a must.

A dryer, we feel, is worth having — and your honey crop will be larger.

The Anatomy Of The Hobby Bee Club

By LEONORE M. BRAVO
San Francisco, CA

IN CALIFORNIA THE potential for hobby bee clubs is great, there being 10-20,000 hobbyists in the state according to Dr. Eric Mussen, University of California Extension Apiculturist. Yet there are only six such organizations listed with him. Another six are listed as historically commercial, now mostly hobby. Figures provided by eight of these hobby and mostly hobby groups and data from one not on the lists indicate that there are about 563 individuals belonging to them. Insofar as there is no enforcement of the Apiary registration requirement in the cities, most hobbyists are not counted. Hence the broad estimate above based upon the sales of bee supply houses, requests for catalogs, literature, and information.

Those hobbyists who have formed clubs and kept them going eventually serve the honeybee, their community, and the whole beekeeping industry to a greater extent than they profit personally, in my opinion. For this reason members of the San Francisco Beekeepers have attempted to organize their neighbors to the north and south of them with one success and two failures. Among factors which seemed operative in the successful attempt were imminent threat of a negative bee law — which was averted — and the presence of at least one good sideliner. Someone with 25-100 hives in an outapiary with a lot of practical information about beekeeping plus a cultural as opposed to a purely business attitude toward the craft.

It will be well if he/she has kept or is keeping a hive in the backyard, as well. Such a person will have the perspective to know that methods typical of high honey production are usually mal-adaptive in a tightly urbanized area where every manipulation of the hive stands to excite the curiosity and attention of one's neighbors when the secret of success lies in keeping the bees out of sight and out of their minds as far as possible. Indeed, any beekeeper who teaches beekeeping according to the book and/or as it is done on an acre in the country can be a detriment.

Leonore Bravo and Mark Thompson at honey table, San Francisco Beekeepers' exhibit at San Francisco Flower and Garden Show, August, 1980.

This person must have willingness to give of his/her self to make the enterprise go. This is the person with the least to gain from the practical point of view, having an outapiary and no great need for support. However, this person like everyone else stands to benefit from stimulating associations, from the good programs that can be developed, from the encouragement to attend convetions, to read the bee literature and to gain a great deal from this kind of personal expansion. And as an association member he'll get his bee journal at a reduced rate! For his benefit, one or two other experienced beekeepers of similar orientation will provide a little communtity of interest for them.

A free and public place to meet is a helpful factor, but not essential. In the current fiscal austerity in California one group must pay a nominal fee for use of the meeting room. Another old and very successful group meets in members' houses.

A factor that was present in the failures was a higher level of affluence than anywhere else. People had the money to pursue other interests and were taking advantage of a wide range to choose from. These people were less likely to take part in the **work** of making an organization go. But it could well be that given the threat of a negative bee law, sideliners who exist in those areas would have come forward with the necessary leadership, secured a meeting place, and lured these people out. Dovetailing with this observation came information from hobby bee clubs that their members for the most part are working people of middle circumstances.

As I pondered on what would have made these organizations viable after our efforts to get them going, I undertook a study of the hobby bee clubs listed by Dr. Mussen as well as the historically commercial, mostly hobby. I used the **National Survey of Organizations Questionarie** devised by the Department of Sociology of the University of Pennsylvania modified to suit the bee club. These were: San Francisco Bay Area Beekeepers with 52 members; Grass Valley Beekeepers N/R; Sacramento Area Beekeepers, 40 members; San Francisco Hobby Beekeepers, 80 members; and the Sebastopol Bee Club, 40-50 members. The Western Apicultural Society was on the list but not queried as it is different from a local bee club.

Under historically commercial but mostly hobby now were listed our

good friends and neighbors to the East, the Alameda County Beekeepers, 120 members; the Los Angeles County Beekeepers, the Santa Barbara Beekeepers and the Santa Clara Beekeepers and the Santa Clara Beekeepers Guild, not responding; the Orange County Beekeepers, 121 members, and the San Diego County Beekeepers with 75 members.

I interviewed at length the two longest standing members of the Alameda County Beekeepers, Eva Murray and Mario Sarocco, completing that questionaire from their information. I gained further information from an article appearing in the *American Bee Journal*, January 1968, about Lee H. Watkins who was president of the organization from 1949-51 and apiary inspector in Alameda County in 1950 and 1951.

Of those clubs responding, San Diego was the oldest, having organized in 1922, broke up in 1942, probably due to WW 2, and reorganized in 1950. Alameda County organized in 1925 around then County Bee Inspector, Mr. Hartmann. Charter member Sarocco said that foulbrood was the big concern then. He used to drive Mr. Hartmann around on his inspection tours on the weekends as Mr. Hartmann was getting old and didn't like to drive. In that way he learned a lot about beekeeping and began keeping them. He quickly became a commercial beekeeper moving them around to various places in the state until 1960. He continued hobby beekeeping until 1970 and was active in the Alameda County Beekeepers until 1975. His comment "by then there were too many amateurs" reflects his commercial orientation and that of the organization. It also alerts those of us who want to make bee clubs go of a need to have a balance in our program so as to make attendance worthwhile for the experienced beekeeper as we seek to absorb newcomers. It points, in my opinion, to a need to provide classses in beekeeping in the local adult education program so that the basic needs of beginners can be met without boring the more advance members.

In 1974 a group of "beekeeping friends" organized themselves quietly around Herbert Fields, then of San Francisco, now of Colma. That group, the San Francisco Bay Area Beekeepers, with members from Santa Rosa on the north to San Jose on the south were so quiet that a second group organizing in San Francisco was unaware of it. Then 1976-77 was a big year for hobby groups, four were formed: Sebastopol, Sacramento,

Beginning of S.F. Beekeepers' exhibit at the San Francisco Flower and Garden Show. Hall of Flowers, August 1980.Dadant study prints, leaflets, magazines and small books. Beginning of honey table and local bee forage plants.

Orange County, and San Francisco. While only two of these groups indicated that a possible negative bee law or other adverse action stimulated them, it needs to be taken into account that this was the beginning of the African bee hysteria which no doubt contributed to beekeepers banding together in psychological defense if nothing else. It seems that it was on the impetus of this wave that the Western Apicultural Society was organized. This is designed to give hobbyists a place to go where the program is planned to allow them maximum participation. Up to that point forward looking sideliners and a certain number of really keen hobbyists sought the stimulation of the State and National beekeepers conventions. And many still do! As long as they were just seeking to keep up with the latest developments in beekeeping and knowledge of the honeybee, these conventions were adequate. But to the extent that they would have liked to particpate in the politics of such organizations, they didn't have the right number of beehives. The Western Apicultural Society fulfills this need as well as all others provided by any beekeeper's convention.

The respondents to the questionaire indicate that information exchange is the primary purpose for getting together with social exchange a close second. In one case , however, the respondent noted that the organization was 90% male and not that interested in the social. At another with 35% of the members women beekeepers, the refreshment table is presided over by a dedicated charter member, most graciously. She is somebody that people come to be with, and veritably part of the glue that has held the organization together. Then there's the "beekeeping friends" mentioned above; that club meets at a different member's house each meeting and they always have a pot-luck dinner. Empahsis is on the social with information exchange taking place within that context. At times there is a formal presentation following the potluck. The more hobby oriented the organization, the greater its individuality

Two of the organizations responding do not have a constitution nor by-laws. Both are strong and successful clubs. They elect officers as required and solve policy and other problems by group discussion. Upon close examination, by laws not withstanding the others solve theirs the same way. On this point Mario Sarocco said that the Alameda County Beekeepers didn't have a constitution and by laws until its president died in office about 1955-56 spurring someone to do a lot of research and turn up with the document. He said of it "No big deal, we settled things by policies developed among ourselves". One, the smallest reporting has both a constitution and by laws and is the only one incorporated. So if you want to form a bee club you can go any way that suits your talents and lifestyle and succeed.

Most organizations have three officers: President, Secretary and Treasurer. Two report five, in which case there is a vice president or program chairman and a refreshment chairperson. Instead of a program chairperson, one group called all past officers and any interested parties together to work out the programs for the year in advance. They came up with that turned out to be an outstanding series of programs. In another case the newly elected officers came together for the same purpose.

Activities of the clubs such as the newsletter or meeting notice card, dues to affiliates such as WAS or the State or National beekeeping federations, refreshment for the monthly meeting and other such expenses are paid by dues which range from $3.50 to $12.00 per annum. Funds for special projects such as insurance where clubs have outapiaries on public lands, cost of program materials such as paid speakers and film rental, may be gotten in part by buying supplies wholesale and reselling them, raffles, cake sales, paid luncheons or dinners or any other means common to organiztions trying to raise money. There is available to all county fairs in California funds from dog and horse racing for prizes to participants. Our neighbors the Alameda County Beekeepers having been organized when the county was largely agricultural and had a number of commercial beekeepers always has a fine booth at the county fair and their funds are augmented by the prizes they win. This opportunity exists for all other clubs excepts San Francisco which has no agricultural land at all. We are however the City and County of San Francisco and have an agricultural commissioner with a staff that goes out in the early dawn to inspect all the fruits and vegetables and other agricultural products coming into the city market to make sure that they're good for our health.

But all is not lost. Fifteen years ago or so some enterprising residents pursued the matter of the money that we weren't getting, managed to get it, and put up a beautiful exhibit center, the Hall of Flowers in Golden Gate Park. This brought together all the floriculture and horticulture groups in the city which co-operate once a year in putting on a spectacular flower show. Beekeepers were able to persuade the fair committee to let us in. An agricultural exhibit with emphasis on honey production wouldn't be appropriate, but we put on a good informational exhibit with emphasis on the importance of the honeybee in the city garden. Luring people to our exhibit with our demonstration hives which have become an advertized attraction, we have on hand little jars of honey from the various neighborhoods as well as pieces of comb for the tasting and sweetening of our neighbors. This last year we had on hand such other hive products of current interest as propolis, pollen, propolis-pollen preparations, royal jelly and a locally made face cream based in beeswax. These were commercial preparations with explanatory labels and we had some literature about the use of such products in general. The opening of the show is a gala $25.00 per person charity fund raiser at which we delighted people with a taste of mead. WE SEEK TO INFORM is our message and we make use of a Dadant flyer, PUT BEES TO WORK IN YOUR GARDEN, by the thousands. In additon we have our own leaflets on swarms, stings and references as to where local householders can get help with bee, wasp and bumblebee problems. We have copies of the bee journals and books for people to examine and leaflets from the bee supply houses to give away. We pick up members from this exhibit.

Hobbyists Ann Steinlauf answering questions about the mechanics of honey production. San Francisco Beekeepers' exhibit, Hall of Flowers, August, 1980.

Although we don't get a prize, the fair committee will pay for whatever materials we need to set up the show which came to $250.00 this last year and included the beginnings of a bee library for our club as we will house a lot of fine books that we bought to show between exhibits. We seek in this way to keep as many people as possible on our side when the spring confrontations occur, which they will when the swarms come out.

Respondents to the questionaire indicate that many lifestyles and kinds of people are brought together by the bees. Most people are of middle economic and social circumstances living in their own homes. There are few wealthy ones and probably no really poor ones. There are some who are renters in San Francisco, keeping bees in the backyards of our multiple-dwelling flats with the landlord's permission. Whereas most are working people every group has some professional and semi-professsional people. People are of all ages. We have each year in the San Francisco group at least one child, i.e. someone 12 years old or so on through active members in their seventies. I would agree with one respondent who mentioned "independent lifestyle" as being a characteristic of those belonging to bee clubs which cuts across all other social and economic circumstances.

All but one of the largest and oldest organizations has a newsletter of some sort. That one finds a postcard reminder of the meeting sufficient. There is wide variation in these newsletters from just talk about the activities of the more active members to information about unique local circumstancess to unusual facts gleaned from unusual sources. This is an area that could be improved in my opinion given the cost of copying and mailing. Since information is widely available from the bee journals it seems that observations based on local conditins that would take input from several contributors would be better than the usual one-man journal.

Most organizations reporting do not have standing committees but form them as the need arises or simply handle the matter by open discussion. They meet monthly, with one of the largest and historically commerical having meetings of the officers twice a month apart from the regular meeting. That club is affiliated with both the state and national beekeepers organizations in which their members take an active part. An observer related that there was a big improvement in the program of another club when an incoming president called all of the officers together at the outset of his term to plan the program and other activities for the year.

The basic purposes of the bee club as indicated in a check list on the questionaire is given life by a summary by Sebastopol: "To provide a vehicle for the members to associate with and get to know other beekeepers, to share information and knowledge, a teaching learning kind of exchange". Beyond that, clubs in the middle groups such as Orange County get into the politics of the bee industry in terms of watching legislation of concern to the industry and taking appropriate action including fund raising for programs of importance. Almost all groups have some contact with government agencies in terms of getting speakers for programs, asking for publications such as the APIARY NEWS published by the Co-operative Extension Service, registering their bees with the county agricultural agent or asking for films or government publications.

Typical club activities listed by respondents to the quesstionaire are: Exchange information, 8 often; Display materials, 7 sometimes, 1 often, Show films and slides, 7 sometimes, 1 often; Speakers on entomology, 7 sometimes, 1 often; Speakers on current research, 6 sometimes, 1 never, 1 often; Paid speakers, 5 never, 3 sometimes.

The Sacramento group being near the University of California, at Davis with its strong apiculture department is the lucky organization with free access to speakers "often". Whereas some other groups not having such access to speakers rely more heavily on films and slides and may report "never" paying a speaker, they pay for film rental. San francisco with the lowest dues of all the clubs frequently pays at least transportation to get entomologists and other researchers, and even to get beekeepers from other organizations who have good programs to present. When there is a need to raise more than transportation or when the transportation is from a long way they put on some sort of fund raiser.

San Francisco Show 1979, Louis Dubay and visitors.

Occasionally three organizations in the San Francisco Bay Area get together to put on a Saturday "bee day". Besides getting a speaker of the calibre that addresses the State and National bee conventions they put on a show of their inventions and have speakers on some aspect of practical beekeeping such as disease control which is of use to them. This is very stimulating insofar as most city beekeepers do not have the time nor are they likely to devote the money to attend a convention. Whereas very few hobbyists attended the California State Beekeepers convention when it was held in San Francisco these Saturday bee days are very well attended.

Typical requirement for membership in the organizations is simply an interest in bees and payment of the dues. In one case, the San Francisco Bay Area beekeepers mentioned earlier, which meets at a different member's house each month, membership is by invitation. This is a unique group with some fine young hobby beekeepers in their 20's and 30's hence differeing age-wise from other groups. Their low-key gatherings are very pleasant. Like all other groups reporting they have a few members who are not beekeepers, but as they say and as the rest of us observe they usually become beekeepers eventually.

Statistics of length of membership indicate that all groups have a handful of core members who are dedicated to making the club go. These people come each month to talk to one another and to be on hand to help those who are starting or less experienced than they are.

Besides this core group there are new members every year who become acquainted with the idea of hobby beekeeping from articles at the time of the spring swarms or at exhibits at local fairs put on by hobby groups. Sometimes local hobbyists recruit members when they have swarms to find homes for. A word of warning in passing, this is not a good thing to do unless the recipient has a strong interest in **bees** and will study and read and become active in the hobby organization at least until he gets control of the situation. Nothing is more threatenting to the well being of city beekeeping than the sight of an initiate who is incapable of handling bees wearing his helmet, veil and gloves while watering the front lawn. He is poor advertisement for the essential gentleness of the honeybee and will alarm the whole neighborhood, and worse!

No matter what hobby only a few people have a life-long dedication to it. Interest in hobby beekeeping ssems to have a 3-5 year life span for the average city person. In the first year he/she is greatly excited about beekeeping; buys the necessary tools and equipment, takes a course or workshop of some sort, hopefully buys a book and subscribes to a bee journal. Then he/she gets his/her bees

and ideally is in a wonderland of excitement as the bees reveal their wonders which have fascinated the thoughtful person over the centuries. They enjoy both the informational meetings and the social exchange which are the primary activities of bee clubs. And when they harvest their first honey crop, the excitement and satisfaction are likely to carry them through the consequences of the stings they get until they become skillful enough to avoid them.

Those who learn at this stage how to live with their bees, how to accomodate the hobby to the size of their backyards and the human ecology of their own living groups and neighborhood are likely to be those who go on with the activity. One hive or two at the most using a single brood chamber with the kind of accurate and immediate supering possible when the hive is right under one's nose and in view daily is characteritic of successful accomodation when living in close quarters. This is absolutely contrary to best practice in commercial beekeeping where the way to go is to get as many boxes as bees going as possible on each hive in anticipation of a big honey crop.

When hobbyists in the city build up to four big hives in the backyard it won't be anytime before they have problems with the neighbors over swarms and/or window soiling unless they are both very lucky and very skillful. To the extent that other family members are not interested in bees or beekeeping and/or are afraid of them, they will soon find it difficult to put up with the fallout from the mechanics of processing a honey crop in the kitchen or basement. They find if difficult to find room for all of the equipment that goes with it. If the hobbyist is determined to continue in that vein, he will need to find a location in the country and will be on his way to becoming a "sideliner". As a matter of fact some city hobbyists have in mind working up to that status as a retirement job.

But disatisfaction with the amount of time spent on the hobby on the part of other family members sometimes results in its termination. People who keep their operation within tenable limits may continue on with it but not attend bee club meetings after the first three years or so because by then they've learned all about beekeeping and because there are new or competing interests that leave no time for meetings. This is especially true of young members, especially students. They get a lot out of the experience and then move on to something else. So it's left up to the core group, to those with a soul attachment to the bees to keep the organization going which brings us to a consideration of the kinds of programs that will be likely keep the greatest number of people coming for the longest time. That will be the suject of a future article.

Meanwhile if you want to start a bee club, get your beekeeping friends together, find a place to meet, put notices in the local newspapers announcing the event, get someone to bring tea and coffee and some cookies and spend the first meeting getting to know one another and discussing what you expect to get out of such an organization. In the beginning, a panel of the experienced beekeepers answering the questions of beginners will provide an illuminating and exciting time. You may need a referee when opinions on how to do things vary. And they will! At the same time contact your State Apiculturist, the county agricultural commissioner and other sources for films and speakers for program materials. As already stated, a sequel to this article will be on successful programs.

If you wish to join a club there may be one that you're not aware of. Below is a list of clubs and contact persons in California:

HOBBY ORIENTED

Bay Area Beekeepers
%Herbert Fields
1691 Annie St.
Colma, CA 94105

Sacramento Area Beekeepers
%Mrs. Barbara Dwyer
600 Harbor Blvd.
West Sacramento, CA 95681

Sebastopol Bee Club
%Allan Hardman
2100 Kawana Springs Rd.
Santa Rosa, CA 95404

The Eureka Group
%Frank Shaffer
1125 Searle St.
Eureka, CA 95504

Grass Valley Beekeepers
%Mike Daley
215 Nevada St.
Nevada City, CA 95959

San Francisco Hobby Beekeepers
%Mrs. Leonore Bravo
47 Levant St.
San Francisco, CA 94114

San Mateo County Beekeepers
%Harry Davis
845 N. Delaware St.
San Mateo, CA 94402

Historically Commercial (But Mostly Hobby)

Alameda County Beekeepers
%Mrs. Pat Homen
15663 Wicks Blvd.
San Leandro, CA 945799

Los Angeles County Beekeepers
%Charles Duncan
2210 Wilshire Blvd.
Suite 344
Santa Monica, CA 90403

Orange County Beekeepers
%Ron Neese
2100 E. Howell
Unit 105
Anaheim, CA 92806

San Diego County Beekeepers
% Charles Morse
12102 Wildcat Canyon Rd.
Lakeside, CA 92040

Santa Clara Beekeepers Guild
%Julien Verheyden
244 Marvin
Los Altos, CA 94022

Obituaries

EDWARD J. COPE

Mr. Edward J. Cope of Attleboro, Massachusetts died April 21, 1981 at age 80 of a heart attack. Mr. Cope started beekeeping in 1929 as a hobby. In 1935 he founded Moorland Apiaries. Many of his original customers are still doing business with Moorland.

Mr. Cope was an active beekeeper at the time of his death, keeping some 150 swarms in several cranberry bogs in Massachusetts.

Moorland Apiaries continues operations under the direction of Mr. Cope's son.

HARLEY SELWYN

Harley Selwyn of Chelsea, Quebec, Canada died on March 31, 1981 in his 93rd year. He died in Florida where he wintered for the past 28 years.

Mr. Selwyn maintained bees in Quebec for nearly 65 years, attending to them after his return from Florida in the spring during his retirement years.

Thirty Years With The Bees And Beekeepers

By RAYMOND LAYNE
Berea, Kentucky

MY FIRST EXPERIENCE with honeybees was going along with my Dad and Grandpa to the woods to watch them cut a bee tree. Dad knew nothing about handling bees and I learned later that Grandpa knew very little and most of what he did know was wrong. Since I was too small to be of any help, I was told to stand back out of the way and be ready to run.

Grandpa made a "smoker" by twisting a cotton wick and tying it between three corn cobs with a fine wire. They had no veils or gloves. They carried a tall box hive that had been thoroughly rubbed inside with green peach tree leaves to make it acceptable to the bees. I was assigned the job of carrying the axe.

It did not take long to saw and chop the medium sized black oak tree down and then began the sawing and splitting out of the section of the hollow part where the bees were. Grandpa said they were wild black bees and "mean as the Dickens". By smoking with the improvised smoker and taking many stings the bees were "drummed" into the box and left for night to come when they went back and carried the bees home. Since the season was late for cutting bee trees, the bees did not have time to store enough honey to carry them through the winter which resulted in their being starved.

Back in 1950 I was a teacher of Vocational Agriculture at Valley Station, Kentucky. Fred (Pop) Miller visited my classroom and talked to the class about bees and beekeeping. I was invited to join the Kentucky State Beekeepers Association, which met in Louisville from time to time. This was my real introduction to bees and beekeepers.

Word soon spread that the Future Farmer Boys were interested in studying bees and a gentleman in the area offered to give us 20 hives of bees for half the honey for two seasons. The class and I began some serious study of bees and beekeeping. We read books, magazines, saw films, listened to beekeepers and attended beekeepers meetings. At one time there were 30 Vocational Agriculture Students with a hive of bees for a project in school. Some were successful in getting the bees to thrive and some were not. Fred Miller took great interest in the boys and their projects. He made many visits to the classroom and to the farms during the school year to advise the boys. He ordered the packages of bees, then demonstrated how to put them into the hives, how to prepare syrup and how to feed the bees. After the honey crop was harvested he urged them to prepare some of it to exhibit at the State Fair Honey Show. Some folks felt that it was not fair for the students to show in competiton with adult beekeepers. The State Fair Entry Department agreed to set up a Youth Division for the FFA and 4-H members to show.

At the time the State Fair Board did not offer cash prizes for Bees and Honey Exhibits. Several of the members of the State Beekeepers Association donated cases of honey to be sold to raise funds for cash prizes. At this time the State Fair was held at the "Old Fair Grounds" on the west side of Louisville near the Ohio River. The facilities were old, delapidated and inadequate. Several members of the association met and with donated scrap lumber built shelves on which to display the exhibits in the Honey Show. At the first showing the honey jars were being stolen from the shelves by visitors to the fair. It was found necessary to built a fence a poultry netting around the exhibits to protect them from "snitching".

The State Beekeepers Association officers decided to build a traveling exhibit to attract attention and to interest beekeepers out in the state to join the state association. Pop Miller, James Dierken and Elmo Wilson built a two wheeled trailer to hold such items as a bee hive, extractor, jars of honey, observation hive, smoker, bee veil and hive tool. The trailer was enclosed and the left side opened up to show the interior filled with the "bee stuff". Pop Miller pulled the trailer from County Fair to County Fair. He would set it up at a good spot and stand beside it and talk all day to anyone that would listen. Much favorable publicity was obtained. Honey was sold from the trailer to defray the expenses of moving the trailer from place to place. Beekeepers were asked to join the State Association and membership gradually increased.

There soon developed jeasousy in the ranks of the members and officers as to who was in authority and who deserved credit for chores done. One faction leader decided to build his own "Traveling Bee Exhibit". He built a frame on his pick-up truck and put screening over it and put in a hive of live bees. He pulled the truck up by the door to the Exhibition Hall of the State Fair and by a LOUD VOICE attempted to detract folks from seeing the exhibits on the inside. After the State Fair was over, he contacted the Commissioner of Agriculture at the state capitol and got permission to take his traveling show out to distant parts of the state to do "Extension Work". He loaded his truck with cases of honey, knocked down hives, foundation, empty jars and odds and ends of bee supplies and went into counties to hold "bee meetings". One thing was wrong about the "enten-

Raymond Layne is a very well-educated, active, and interesting person. He is a walking history book about Kentucky history. He earned a B.A., B.S., and M.A. degrees. He was the first teacher in Kentucky to teach on telvision. He is a cabinet maker and has made and sold over 400 dulcimers (a pioneer musical instrument). He has researched and written his own family genealogy. He is a master story teller.

He motivated and guided all four of his childern to earn a Master's Degree; one has a Ph.D. degree.

He is one of the most fascinating persons I have ever met. At the age of 83, he still maintains a few beehives.

His wife is also a retired school teacher.

James M. Steed
Richmond, KY

sion work". Since he was at outs with the officers of the association, he lost no opportunity to knock the association. Many members got tired of the bickering and dropped out of the association. Membership fell drastically.

After I have been a member for a few years, it became time for me to assume more duties. I was appointed by the State Fair Board to be Honey Show Superintendent. Little did I know what I was in for that summer. Part of my duties were to try to keep peace among the factions of the association and to manage the Honey Show. Another duty was to secure a judge for the Honey Show. I persuaded Dr. Lee Townsend of the University of Kentucky Department of Enotomology to accept the job. Dr. Townsend had been teaching courses in beekeeping for several years at the University. He came to Louisville and did a fine job of judging the exhibits. After he finished judging, he carried his notes and pointed out to me where to place the various colored ribbons on the exhibits. The exhibits were roped off to keep spectators back out of the way. Of course the exhibitors were hanging over the ropes to see where the ribbons were being placed. When the placing was about half over, a female yelled out, Hey, Doc, what is the reason you did not put a blue ribbon on my jar?" That was when the stuff hit the fan. You may imagine the confusion and anger that was generated in the honey show. Dr. Townsend was literally cussed for all the "bad" things he had done in judging. He vowed to never again judge another honey show at the State Fair. Looking back now, I see that I should have let the judge get out of town before the ribbons were placed on the exhibits.

James Dierken, while president of the state association started writing a bulletin which he called *The Kentucky Bee Line*. Jim worked for a newspaper in Louisville as a linotype operator and could print "proof sheets' at will. Interest in the association would ebb and flow every two or three years. By 1962 very little interest was shown in the association and there were no local associations that I know of. At this time I was elected president and along with the office came the job of writing the *Bee Line*. At that time it amounted to little more than sending out the announcement of the next meeting and adding some pertinent facts of comments. Sending out 30 notices was no big deal.

We were meeting in the auditorium of the Bourbon Stock Yards by the time. Members brought a covered dish and the association furnished the coffee and donuts. We were serenaded by the pigs squealing and the cows lowing for the calves. Attendance varied from 15 to 25 usually. We tried to get interesting speakers from "outside" when we could find one willing to come to talk to us. Once we had Mr. G.H. Cale, Editor of the *American Bee Journal*. I mentioned to him that I was teaching a short course in beekeeping to Vo-Ag classes and he suggested that I have some pictures of the activity made and submit them for possible publication in ABJ. I sent him 6 photos and he published all of them. This gave our FFA boys a big boost in morale. The state association got permission to sell a limited quantity of honey at the Honey Show. Beekeepers were given an opportunity to register and join the association. Later they were sent a copy of the *Ky. Bee Line* and we were surprised at how many sent in a dollar for dues to become a member of the association. Membership grew until we were sending out over 300 copies of the *Bee Line* each month.

Dulcimers made by Raymond Layne. Photo by James Steed

As interest in beekeeping grew in Kentucky so did the association. Here and there over the state a county or local beekeepers association would bse organized. I recall one was organized at Elizabethtown, one at Glasgow and another at Greenup.These local associations were organized by some beekeeper who attended the state meetings and become inspired to do something in his community. But when this leader lost interest, moved or died, the association would perish. Other local associations have been organized and some are still thriving more or less.

Over the years I have had opportunity to visit beekeepers meetings in this and other states to become acquainted with beekeepers and their methods of handling bees. I have visited in Ohio, Missouri, North Carolina and Florida. On one occasion I invited Robert Shepherd, then president of the Ky. Beekeepers' Association to visit us in our Laurel Lodge in North Carolina. While there, we visited the N.C. State Summer Conference at Banner Elk. Robert liked the meeting there and said, "We can do this in Kentucky." He never lived to see his project happen. Vice President Harlin Robinson took over and promoted the Summer Conference of Ky. Beekeepers. The first meeting was held at Berea College, in Berea. The Conference was moved was moved to Eastern Ky. University of Richmond. Harlin continued as president for three years and during his administration much progress was made by the association. He got the support of officers and members and was able to presuade the directors to support many new projects. One such project was buying a commerical booth space and arranging to sell honey at retail at the State Fair Honey Show. Profits from this project have kept us in the black.

He also launched the HONEY QUEEN PROGRAM to coincide with the Summer Conference each year. In addition to his regular duties of being president of the association, he found time to build an outstanding exhibit of honey and honey plants. This exhibit was awarded first prize at the State Fair Honey Show. and it was exhibited at the Ohio Honey Festival. Harlin and I visited and participated in the Southern States Federation of Beekeepers meetings

at North Carolina, Arkansas and Mississippi. Harlin invited the Southern Association to come to Kentucky for a meeting. They came and the meeting was held in Lexington.

Over the years I have held every office in the association except Sgt. at Arms. For several years I served as Secretary, Treasurer and Editor of the *KY Bee Line*. The year 1980 was my "closing out" year. Allen Holt took over the job of editing *The Bee Line* and others were elected to the other jobs. My next project and interest in a bee related job is to work with members in setting up an educational exhibit at the Eastern Kentucky University Museum. Ruth Robinson, widow of Harlin, has donated the exhibit that Harlin made, to the State Association to be housed at the EKU Museum. This exhibit is to become a nucleus about which other supporting exhibits will be displayed. Members and local associations will be asked to give time and articles to build the exhibits into a valuable BEES AND HONEY CENTER. School pupils and adults will be welcome to come and study or enjoy the many exhibits.

Raymond Layne working with his hand operated printing press. Photo by James Steed.

I feel that one of my most valuable services to Kentucky Beekeepers has been to select and urge good beekeepers to be slated for officers in the association. Many of my friends have told me that my efforts over the years have helped to keep the association going during rough times. In looking back over the years with the bees and beekeepers in Kentucky I find that a great many of my best friends are folks whom I met at "Bee Meetings".

Dreams of Bees

"If you dream that bees have nested on your property and are making honey there, you will prosper."

By JAMES TIPTON
7088 N. Winans Rd
Alma, MI 48801

LAST NIGHT on a whim I pulled off of our shelves several books on dream interpretation and I looked up insects and particularly bees. Probably most beekeepers at one time or another have gone to sleep at night and dreamed about bees. I know I have. I've had several dreams about bees over the years, usually after a rather tense day with the bees — cloudy skies, little nectar — days when the bees were difficult to handle (or one day in particular ten years ago when, as a novice, I extracted six or seven hundred pounds of honey with a handcrank extractor in the back yard on the picnic table).

Likewise, I have often gone to sleep after hours of tractor work and dreamed about endless furrows, or about disking endlessly; and I assume that most people have had similar experiences — intense work of essentially the same kind, for a long period, followed by additional work during sleep. Robert Frost, I believe, has a poem titled "After Apple Picking," in which he falls asleep and in sleep continues to exhaust himself picking apples.

But, I am talking about bees and not apples, and about dreams of bees. One of the books I checked in is *The Individual and His Dreams* (1979) by Calvin S. Hall and Vernon J. Nordby. Those authors mention that animals in dreams, including insects, often chase or attack the dreamer. They also mention one curious case where a patient under treatment for emotional and behavioral problems dreamed, before treatment, only of inanimate objects. Finally plants began to appear in his dreams and eventually animals, in the form of insects — at which point his dream images started to move up the animal scale until he was dreaming about people (with corresponding improvements in his behavior at each stage).

In another book, *1,000 Erotic Dreams Interpreted* (1976), Graham Masterton says that Carl Jung, the great dream psychologist, "thought of insects as creatures with cold blood and no cerebrospinal nervous systems, whose intelligence was remote and alien" and consequently they might represent, according to Masterton, "thoughts or things that we cannot understand." Masterton does add this note that I think most of us would agree with: "If you dream that you derive erotic pleasure from being bitten by wasps or swarmed over by ants, then you are displaying masochistic tendencies."

The most amusing interpretations and observations I found, though were in Alan Levy's *Interpret Your Dreams* (1962) in which Levy includes dreams of bees among the 200 most common dreams. Levy claims that dreaming about bees stinging you "shows that you will associate with people who will talk against you and perhaps actively seek to discredit you." But, happily, he adds that "If you dream that bees have nested on your property and are making honey there, you will prosper."

Levy also notes that "A number of dream interpreters are rabid beekeepers; it is one of the favorite hobbies in our profession." I hope he means **avid** rather than **rabid**!

Should any *Gleanings* readers — avid or rabid — wish to drop me a note about bees buzzing in their sleep, I'd be interested in hearing from them.

GLEANINGS MAILBOX

(Continued from page 372)

the search for new, safe and efficient pesticides.

Let me discuss several new areas of interest to beekeepers that pesticide manufacturers are investigating. The first would be Synthetic Pyrethroids — a group of chemicals formulated to resemble naturally occuring insecticides produced by certain plant species. These are very effective against various insect pests, but research has shown that if they are properly applied, they may in fact repel honeybees from treated plants. The second area of investigation would be insect growth regulators or inhibitor hormones. These act to prevent pests from completing their metamorphoses and reproduction. They also appear to be safe for honeybees.

In conclusion, let me comment on the research being done with the miticide K-79 in West Germany to control Varroa Mites. Mr. Mraz seems quite ready to support the use of a pesticide when his livelihood is threatened, but criticizes others in agriculture when they do so to protect their investments and businesses.

My suggestion would be that we all should stop pointing fingers and work together to help solve each other's problems so that in the future, we might all be able to practice our chosen professions in whatever manner necessary to feed and clothe a world which is expanding in population and declining in resources.

FMC Corporation
Richard R. Cater
Technical Service Representative
Eastern Direct Sales

Part of the crowd to participate in the groundbreaking for an apicultural building, the first such facility on a college campus, on a cold April day 31 years ago. The building was dedicated on June 16, 1951.

Thirty Year Celebration

By DEWEY M. CARON
College Park, MD

THE APICULTURE BUILDING on the University of Maryland campus is 30 years old. And when Maryland beekeepers gathered to celebrate it's birthday June 20, the history and significant apicultural developments in Maryland were highlighted. The meeting also included demonstrations of new and old equipment and colony management techniques.

The Apiculture Building on the Maryland campus was the only building of its kind on a college campus devoted exclusively to the study of apiculture when completed in 1951. Apiculture as a course has been offered much longer to students. Currently, a fall lecture course and a spring lecture/lab course are taught using apiculture building facilities as has been the case for the past 30 years but the courses have been continuously offered for the last 50 years. Prior to that, beekeeping was taught to World War I veterans in the 20's. Going back even before the University of Maryland was organized, the school, known as Maryland Agricultural College, offered beekeeping as a part of agriculture and animal husbandry courses dating back to the 1880's. At the founding of the school in 1859, one of the original five faculty positions included an antomologist.

Beekeeping extension activities have continued without interuption with the hiring of George J. Abrams in 1931. Abrams continued with his duties of extension, teaching and apiary inspection work until he died in 1965 while still on the faculty. Following Abrams, Al Dietz and, since 1970, Dewey Caron have served as Maryland extension apiculturists. The first extension apiculturist was hired shortly after the federal Hatch Act was established in 1914 when its first extension apiculturist, G. H. Cale filled the role before joining the federal government as extension apiculturist. Cale left public service for a distinguished career as editor of ABJ.

The apiary located in front of the apiculture building has been used extensively for teaching and extension purposes over the past 30 years. An on-campus apiary dates back to before 1900 and it was identified by E.F. Phillips, a federal bee culture specialist before going to Cornell as the Apiculturist, as the first research apiary of its kind in the western hemisphere. Bees have been an active part of the Maryland campus for many, many years.

At the dedication of the building in 1951, E. F. Phillips presented an original Langstroth hive to the University. George Abrams, apiculturist at the time, collected numerous articles of beekeeping antiquity. Although presently there is not enough room to display these materials, they are made available for meetings and special occasions. The 30th birthday included a special demonstration of the original Langstroth hive and the remainder of the beekeeping historical items.

The June 20th birthday meeting this year was only one of a long series of meetings held at the Apiculture Building. Maryland beekeepers met at the building shortly after it was dedicated. In the grove of trees behind the apiculture building. The EAS Society was formed in 1955. The building and the apiary served as host for the 1967 International Beekeeping Congress, the first of its kind held in North America. Annual short courses host over 200 individuals and a short course of some form or another has been offered each year for over 40 years.

The Apiculture Building on the University of Maryland campus was thus the site of another apicultural event. The 30th birthday was yet another in long series of beekeeping activities. May the Apiculture Building survive another 30 years and continue to record the history and development of beekeeping and guide her people in the teaching and instruction of yet another generation of beekeepers.

Last class (1964) of Professor George Abrams (center, back row) who served as Maryland's Apiculturist for over 30 years.

The Codfish lays 10,000 eggs;
The homely hen lays one.
The Codfish never cackles
To tell what she has done;
And so we scorn the Codfish
While the humble hen we prize —
Which only goes to show you
That it pays to advertise!

MONTHLY HONEY REPORT

(Continued from page 366)

mal. Good demand for new honey crop although the color is dark.

Region 7

Still short on moisture in east central Oklahoma but receiving rain. Season is running late for plant bloom. Lots of clover. May have fair honey season. Arkansas had a good spring honey crop. The mild winter followed by a warm spring with rain allowed bees to work most of the forage. Deficiency of rainfall is being made up. Arkansas still about 2.63 inches below normal for the year. Prospects at the end of May for a good honey crop from beans and cotton are excellent in Arkansas.

Region 8

Spring buildup in the area has been excellent due to mild spring and warm temperature. Late May rains in most areas of Montana. Honey plants in very good condition but there is a shortage of water for future irrigation needs. Honey plants blooming about 8-14 days ahead of normal. Looks very much like a good crop year. Honey sales are good.

Region 9

Honey plants in good condition including both wild flowers and cultivated crops. Orange honey flow was good but amount of bloom was limited. Ranifall late in April improved conditions for sage honey flow. Toyon, wild, lilac and manzanita in heavy bloom in the foot hills, during May. Honey trading moderate. Light honey being brought from Canada that had been previously contracted for. The high loan purchase rates for 1981 crop honey announced by the Agricultural Stabilization and conservation Service has unsettled market conditions for future bulk honey purchases from California or other domestic beekeepers.

News and Events

MINNESOTA
Minnesota Honey Producers Assn.

The summer convention of the Minnesota Honey Producers Association, Inc. will be held on July 16-18 at the St. Cloud, Minn. Holiday Inn, located just off Hwy. 52 on the west side of St. Cloud.

Our meetings begin on Thur. July 16 at 7:30 p.m. with a crop market outlook discussion. The general program continues on Fri. July 17, and Sat. July 18, with talks on many areas concerning the bee and honey industry. Speakers will include, Dr. Shimanuki, Dr. Furgala, and Minnesota Agriculture Commissioner Mark Seetin. A buffet lunch and banquet-funfest will also be a part of this seasonal event. Mark you calendar and plan to attend.

ALABAMA
Alabama Beekeepers Association

The annual meeting of the Alabama Beekeepers' Association will be held in Birmingham on August 7th and 8th at the Ramada Inn-Airport. For information call or write Robert M. Simpson, (205) 323-8325, 1034 23rd. Street, South, Birmingham, Alabama 35205.

WISCONSIN
Wisconsin Honey Producers

Comb honey production, Canadian 4-pack wintering method and honey promotion and marketing will highlight the agendas for the Wisconsin Honey Producers Association summer meetings.

The Northern District meeting is set for Monday, July 20 at the Eau Claire Lake Park north of Augusta and the Southern District meeting will be held Wednesday, July 22 at Riverside Park in Watertown. A potluck noon meal and silent auction are planned for both meetings. Members are asked to bring an item to be sold at the silent auction with all proceeds going to the Wisconsin Honey Queen program. All interested beekeepers are invited to attend either or both meetings.

1981 Wisconsin Honey Queen Laurie Sjostrom is the daughter of Ed and Merle Sjostrom, commercial beekeepers from Maiden Rock, Wisconsin. She's a 19 year old sophomore attending the University of Wisconsin-Stout at Menomonie, majoring in dietetics.

She will travel statewide during 1981 promoting honey and the beekeeping industry of Wisconsin. A major event during her reign will be activities in conjunction with Wisconsin Honey Week, set for the third week in October.

ALABAMA
Madison County-North Alabama Beekeepers' Association

The Madison County-North Alabama Beekeepers Association will hold its annual field day at Monte Sona State Park at Huntsville, Alabama on Saturday, July 25. For additional information contact: Madison County Beekeepers' Association, P.O. Box 3069, Huntsville, AL 35810.

NEBRASKA
Nebraska Honey Producers

The Nebraska Honey Producers will hold their annual summer picnic on July 19, 1981, at Camp Comeca in Cozad, Nebraska. To get to the camp take the Cozad exit off interstate 80 and follow highway 23 (the road you exit on) south for 4 miles. From there you will see signs directing you to the camp.

Plan to arrive around 10 a.m. and a Pot Luck picnic is planned for 12:30 p.m. The camp has a swimming pool with a lifeguard on duty, canoeing, volleyball, horseshoes, fishing, and an indoor building if the weather is unfavorable.

Anyone interested is invited to come and enjoy an afternoon of fun and fellowship with the Nebraska Honey Producers.

CONNECTICUT
Connecticut Beekeepers' Association

The Summer Field Meeting of the Connecticut Beekeepers Association will be held on Saturday, June 27th at Al and Ruth Avitabile's home and yard on Carmel Rd., Bethlehem, CT.

Our main speaker will be Mr. Clyde Light, who will speak on QUEEN INTRODUCTION AND ACCEPTANCE.

There will also be live bee demonstrations. All persons intending to observe the demonstrations are urged to bring their bee veils. Please bring folding chairs.

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 you may telephone Mr. Avitablile at 266-7810 or by writing to the Secretary at 46 Climax Rd., Simsbury, Ct or telephone 658-5013.

CALIFORNIA
A Recipe For An Outstanding Vacation "The 1981 Western Apiculture Conference"

To produce a very high quality recipe, one must use ingredients that are: One, well proven; two, properly applied; and three, blended to perfection. Our recipe has taken heed to this axiom and has the following:

Well Proven Ingredients

(1) Dr. Warwick Kerr
(1) Dr. Walter Rothenbuhler
(1) Dr. Harry Laidlaw
(1) Dr. Norman Gary
(1) Dr. Eric Mussen
(1) Roberta Glatz
(1) Jack Parks
(200-400) Beekeepers of Various Ages and Gender

Proper Application

Living With the African Bee
Disappearance Disease
Varroa Mite
Honeybee Pheromones
Bee Venom
Women in Beekeeping
Queen Selection
Desire to Learn

Now combine all of the above well proven ingredients into one very pleasant campus in Southern California at the University of California at Irvine. No substitutions, please; the temperature and humidity are excellent for proper blending at this location.

Once the mixture has blended for 24 hours, it will be exposed to the aroma of an outdoor barbeque under the stars, with the lights of distant cities twinkling their acceptance.

Approximately 48 hours later (it will take 4 days to complete the full recipe) assemble this now very well blended mixture into appropriate groups. Then carefully distribute these groups throughout a facility that is homebase for 15 to 18 thousand colonies of bees and much of their basic equipment.

Now completely recombine the groups and serve at an annual banquet, garnished with appropriate awards, and top off with an old fashioned square dance, complete with "caller" and good old foot-stomping music.

This recipe, with different ingredients, has been successfully accomplished three times in the past, always with an excellent end product. To further increase the success this year, we suggest Western attire from hat down to boots. (Please no horses or six-shooters). In your overall visit, you may want to allow time to visit many of Southern California's many famous places. Disneyland, Knott's Berry Farm, and Lion Country Safari are all within one hour's drive. Mexico and San Diego are about 2 hours away and well worth the trip.

Looking forward to seeing you all at the 1981 Western Apicultural Society Conference, 17th. through 21st. August, 1981, at the University of California at Irvine. For reservations or further details, please contact Mrs. Zandy Neese, Secretary-Treasurer, at (714) 632-7725 or write to 2882 Standish, Anaheim, Calif. 92806.

NEW YORK
Empire State Honey Producers Association

The annual summer picnic of the Empire State Honey Producers Association will be held at Better Bee Inc., Route 29, Greenwich, NY (about 30 miles northeast of Albany) on Saturday, July 25 at 10:00 a.m.

OHIO
Ohio State Beekeepers' Association

The summer meeting of the Ohio State Beekeepers' Association will be held on Friday, July 24 and Saturday, July 25, 1981 at the Marietta College, Marietta, Ohio. The meeting will be held at the Thomas Hall Auditorium, Room 124, located on the corner of Fifth Street and Putnam Street.

Registration for the meeting will begin at 8:30 a.m. on both days. In addition to the speakers on the program, there will be beeyard demonstrations, display of bee equipment, and exhibits of honey, honey cooking, and beekeeping art. Tours of the local attractions will also be available. Additional information and pre-registration forms may be obtained by writing to: Zale A. Maxwell, 1410 Sheridan Dr., Apt. 5B, Lancaster, OH 43130.

NEW JERSEY
EAS Short Course

EAS Beekeeping Short Course — Aug. 3-5, Rutgers University, New Jersey. Again in '81 there will be a Beekeeping Short Course the Mon., Tues., & Wed. prior to the Eastern Apicultural Society (EAS) annual meeting. The course will be conducted by Dewey Caron (Univ. of Delaware), Clarence Collison (Penn. State), Robert Berthhold (Delaware Valley College), J.C. Matthenius (N.J. Apiary Chief) and Larry Connor (Beekeeping Education Service). Fee $35, room and meals very reasonable in University facilities. To receive a flyer with course and registration details, write to : EAS Beekeeping Short Course, Mrs Norma Wanson, Admin. Bldg., Room 206, Cook College, P.O. Box 231, New Brunswick, NJ 08903.

NEW JERSEY
1981 EAS Conference

The 27th Annual EAS Conference, August 5-8, 1981, presents a honey of an opportunity for beekeepers. EAS members from North Carolina to Quebec, and as far west as Ohio will gather on the campus of Cook College (Rutgers University), New Brunswick, New Jersey to hear bee experts from across the nation speak on everything from the use of bees by the film industry, to how a bee knows its mother.

Direction signs will be posted in key spot locations of all major roads leading to Cook College.

Child care will be provided for childern 3 to 12 years of age under the supervision of a Registered Nurse from 9 a.m. to noon and from 1:30 to 4:30 p.m. An additional charge for babysitting services of $2. per hour, per child will be assessed upon registration.

For those who would like to learn the fundamentals of beekeeping, or those who wish to update their skills, Dr. Dewey Caron has organized a 3-Day beekeeping short course to be held in the Food Science Building. The course will begin Monday, August 3rd., and end Wednesday, when the EAS Conference begins. The course is geared for the beginner and the advanced beekeeper. The fee is $35. and the college can furnish room and board at reasonable costs.

Certification for the Master Beekeepers Program will be introduced at this Conference. The Program is to certify qualified beekeepers to provide assistance and help educate beginners, or to serve in other capacities in the community as expert beekeepers. Certification will qualify them to teach others. Testing will take place during the day, Wednesday, August 5th.

The Ladies Luncheon will be a sit-down dinner, with table favors. By popular demand, a Ladies Fashion Show with bee-related items will be featured in conjunction with the luncheon, in the Round Room of Neilson Dining Hall.

A refreshment hour will precede the Barbecue early Thursday evening at the Log Cabin.

A refreshment hour will precede the annual Banquet held in air-conditioned Brower Hall.

The 1981 EAS Honey Show rules have been completely revised. Contestants should review the new rules which will be published in the June and July EAS Journals.

There are no Campsites within a 20 mile radius of Cook College Campus. Those interested in campground information should contact their local KOA agent and make reservations far in advance of the **pre-registration deadline of July 15th.**

Those interested in taking the 3-Day beekeepers short course are to write to the address below if they would like to receive a flyer, with course and registration details. If you are planning to attend the '81 EAS Conference (whether it be for 1, 2, or 3 full days), please **write for pre-registration forms to:** Mrs. Norma Wanson, Office of Resident Instruction, P.O. Box 231, Cook College, New Brunswick, NJ 08903.

All meal reservations must be made at least 10 days in advance of the Conference, regardless of whether you plan to stay in Campus housing or commute daily. Anybody registering **after the DEADLINE OF JULY 15th.**, or at the door (whether it is for 1, 2, or 3 full days), will be assessed a $12. per person late registration fee. No credit cards honored.

Conference organizers have worked hard to hold costs to a minimum. The total package costs for a couple housed in **WOODBURY DORM**, including conference & registration fees, meals and **lodging, without air-conditioning**, will pay a low price of **198.55.** A single, **male person** can attend for a low cost budget, in non-air-conditioned **WOODBURY DORM**, including all meals, Conference and Registration fees, for a total of **$115.65**

A total package for a couple at the VOORHEES DORM, including all conference fees, meals and air-conditioned lodging, will pay a moderate cost of **$221.35.** For a "top-of-the-line" total **costs for a couple** in air-conditioned **STARKEY APTS.**, including private bath, 3 Bedrooms, a Living Room, Dining Room and Kitchen (can accommodate a family of five comfortably), for a total cost of **$252.55.** You bring cooking and eating utensils. The cost is higher for a family of five.

(Continued on page 410)

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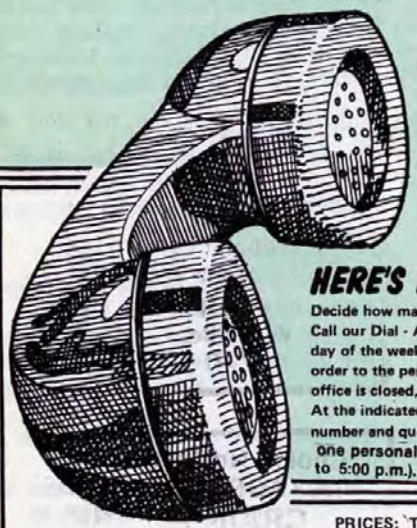

HERE'S WHY:

You can get gentle, productive queens when you need them, not weeks later. Call today, and your queens will be mailed - air mail, postpaid, tomorrow, if available. If we can't ship in two working days, we will notify you by phone. No deposit required, no delay in waiting for checks to clear. You pay on receipt of our invoice.

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Marking - 50 cents
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Package Bees Available

PRICES:	Through June 1	After June 1
1-5	$6.75	$5.75
6-24	6.40	5.40
25-99	6.03	5.03
100-up	5.77	4.77

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Italian Caucasian
Nice large queens
1-24 — $4.25
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Bunkie, LA 71322
Phone: (318) 346-2176

NOTE — The answer to Q & A question #5, page 313, June issue. Should have been (B) instead of (C).
Editor

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Phone: (601) 323-2341
MRAZ QUEENS
Frugal Productive
Disease Resistant
1-24 — $7.25 25-99 — $6.50
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Health Certificate Included
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Gilbert Bourg Jr. — Owner
Box 85 Schriever, La. 70395

(Continued from page 407)

PROGRAM
Wednesday, August 5, 1981

12:00-NOON	REGISTRATION — Desk open 24 hrs./day (Housing Office)
6:00- 7:00 p.m.	Refreshments — (Student Union Center)
7:00- 8:30 p.m.	Dinner (Neilson Dining Hall)
8:00- 9:00 p.m.	Professional Apiculturists Society Meeting (Upstairs, Student Union)
9:00-10:00 p.m.	Annual EAS Delegates Meeting (Upstairs, Student Union Center)

Thursday, August 6, 1981

7:00- 8:30 a.m.	Breakfast (Neilson Dining Hall)
9:00 a.m.	Call to Order — Dr. Radclyffe Roberts, EAS President (Hickman Hall) Invocation — Welcome — Dr. Roger R. Locandro, Associate Dean, Cook College
9:25 a.m.	"Using Bee for T.V. & Films Behind the Scenes", Dr. Norman E. Gary, University of California (Hickman Hall)
10:10 a.m.	Break — Coffee & Sweet Rolls (Hickman Hall)
10:30 a.m.	"American Foulbrood Disease & Its Prevention", Dr. H. Shimanuki, USDA, Beltsville, Maryland (Hickman Hall)
11:15 a.m.	"Using Queens in Your Total Management Program", Dr. Lawrence Connor, B.E.S., Cheshire, Connecticut (Hickman Hall)
12:00-NOON	Lunch — (Neilson Dining Hall) Rectangular Room
12:00- 1:30 p.m.	Ladies Luncheon and Fashion Show (Round Room, Neilson Dining Hall)
1:30 p.m.	"Southern Beekeepers Conference", Dr. John T. Ambrose, University of North Carolina at Raleigh (Hickman Hall)
2:30- 4:30 p.m.	Annual EAS Board of Directors Meeting (Student Union Center, Upstairs)
1:45- 4:30 p.m.	WORKSHOPS — held concurrently (Hickman Hall) 1. "All About Queens & How to Find Them", — Dr. Norman Gary, University of California (Hickman Hall) 2. "Beeswax in Ukranian Easter Eggs, Batik & Candles" — Dr. Robert Berthold, Delaware Valley College 3. "Pesticides & Bees — Dr. Charles E. Mason, University of Delaware 4. "Bee Beards" — Bob Harvey, Commercial Beekeeper, Elmer, NJ
4:30 p.m.	Barbecue Picnic at the Log Cabin — Mini-vans leave from Housing Office, (Lobsters and other seafood, as well as Beef and beverages, all accompanied by entertainment of 5-pc. Oompah band.)

(Continued on page 412)

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Queens	6.50	6.00	5.50	5.00

STARLINE OR MIDNITE

	1-3	4-25	26-99	100-up
2-lb. pkg. w/q	$21.00	$20.25	$19.50	$19.00
3-lb pkg. w/q	26.50	25.50	24.75	24.25
5-lb. pkg. w/q	39.40	38.50	37.50	36.50
Queens	7.00	6.50	6.00	5.50

Prices F.O.B. Jesup
Queenless packages — deduct $3.00 per pkg.
Tested Queens — add $1.50 per pkg. or queen.
Clipped and Marked 50¢ each.

Terms: Small orders cash, larger orders $2.00 deposit per package and balance three weeks prior to shipping date. Allow three weeks for personal checks to clear.

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ITALIAN QUEENS

WRITE OR CALL FOR LARGER ORDER PRICES
QUEEN PRICES INCLUDE POSTAGE
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No. of Queens and Price
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TERMS: Orders $100 or more, 10% deposit and balance due 2 weeks before shipment—others, cash with order.

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	Caucasian Queens	Midnite Queens	Starline Queens	"Double Hybrid"
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VISA and MASTERCARD

(Continued from page 410)

Friday, August 7, 1981

7:00- 8:30 a.m.	Breakfast — (Neilson Dining Hall)
9:00 a.m.	"Title to be Announced", — Dr. James E. Tew, Agricultural Technical Institute, Wooster, Ohio (Hickman Hall)
9:40 a.m.	"Flowers, Bees & Evolution", — Dr. Radclyffe B. Roberts, Prof. of Apiculture, Cook College, New Brunswick & EAS President
10:20 a.m.	Break — Coffeé & Sweet Rolls (Hickman Hall)
10:40 a.m.	"Communication in Honey Bees — Truth in Sending?" — Dr. Roger Hoopingarner, University of Michigan (Hickman Hall)
11:20 a.m.	Annual EAS Business Meeting — J.C. Matthenius, Jr., Presiding
12:00- 1:30 p.m.	LUNCH — (Neilson Dining Hall)
1:30- 4:30 p.m.	WORKSHOPS — held concurrently: (Hickman Hall) 1. "Honey Cookery", — Ann Harmon, Maryland Beekeepers' Association 2. "Chunk Honey", — Al Delicata, Pres., Mass. Beekeeping Federation 3. "Mead Making", — Dr. Roger A. Morse, Prof. of Apiculture, Cornell University, New York 4. "Assembling Equipment", — Mr. John Barlow, Sales Manager, A.I. Root Company, Medina, Ohio 5. "Bee Diseases", — Jack Matthenius, Jr., State Apiarist 6. "Mobile Honey House", — Walt Wilson, N.J. EAS Director and Bee Inspector
5:30 p.m.	Buses leave Housing Office for Brower Hall for Banquet site
5:30- 6:30 p.m.	Refreshments — Social hour preceding Banquet
6:30- 8:30 p.m.	ANNUAL BANQUET — Brower Hall, College Avenue — Awards and Entertainment by speaker, Nate Repair
9:00 p.m.	Buses leave Brower Hall for return to Housing Office
9:30 p.m.	SOCIALIZING — Upstairs at Student Union Center

Saturday, August 8, 1981

7:00- 8:30 a.m.	Breakfast (Neilson Dining Hall)
9:00 a.m.	"EAS Student Apiculture Award Recipient" — To be announced (Hickman Hall
9:40 a.m.	"James I Hambleton Award Recipient"— To be announced
10:20 a.m.	Break — Coffee & Sweet Rolls (Hickman Hall)
10:40 a.m.	"Maternal Kinship Recognition", — Dr. Michael Burgett, Entomology Dept., University of Oregon (Hickman Hall)
11:20 a.m.	"Bees in an Urban Setting", — John Root, Vice President, The A.I. Root Company, Medina, Ohio (Hickman Hall)
12:00-NOON	LUNCH (Neilson Dining Hall)

(GOODBYE — until we meet again August 4-7, 1982 at Morgantown, West Virginia

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

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

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

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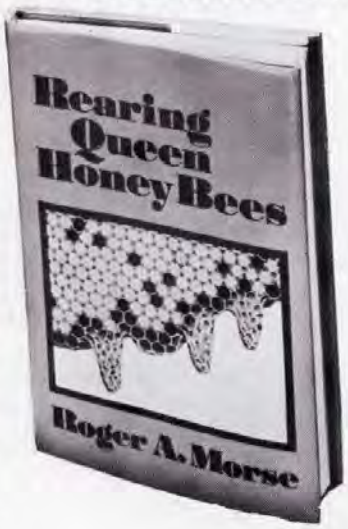

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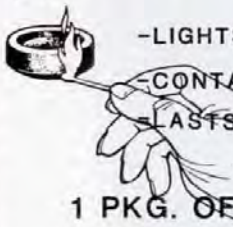

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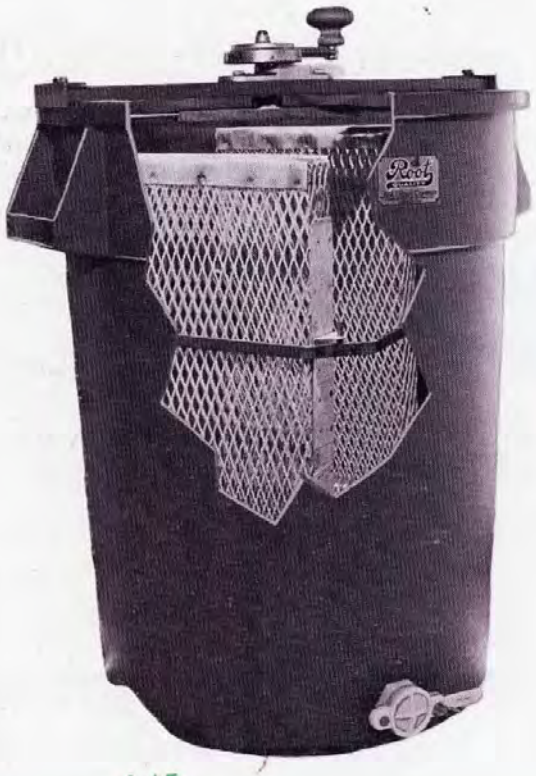

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