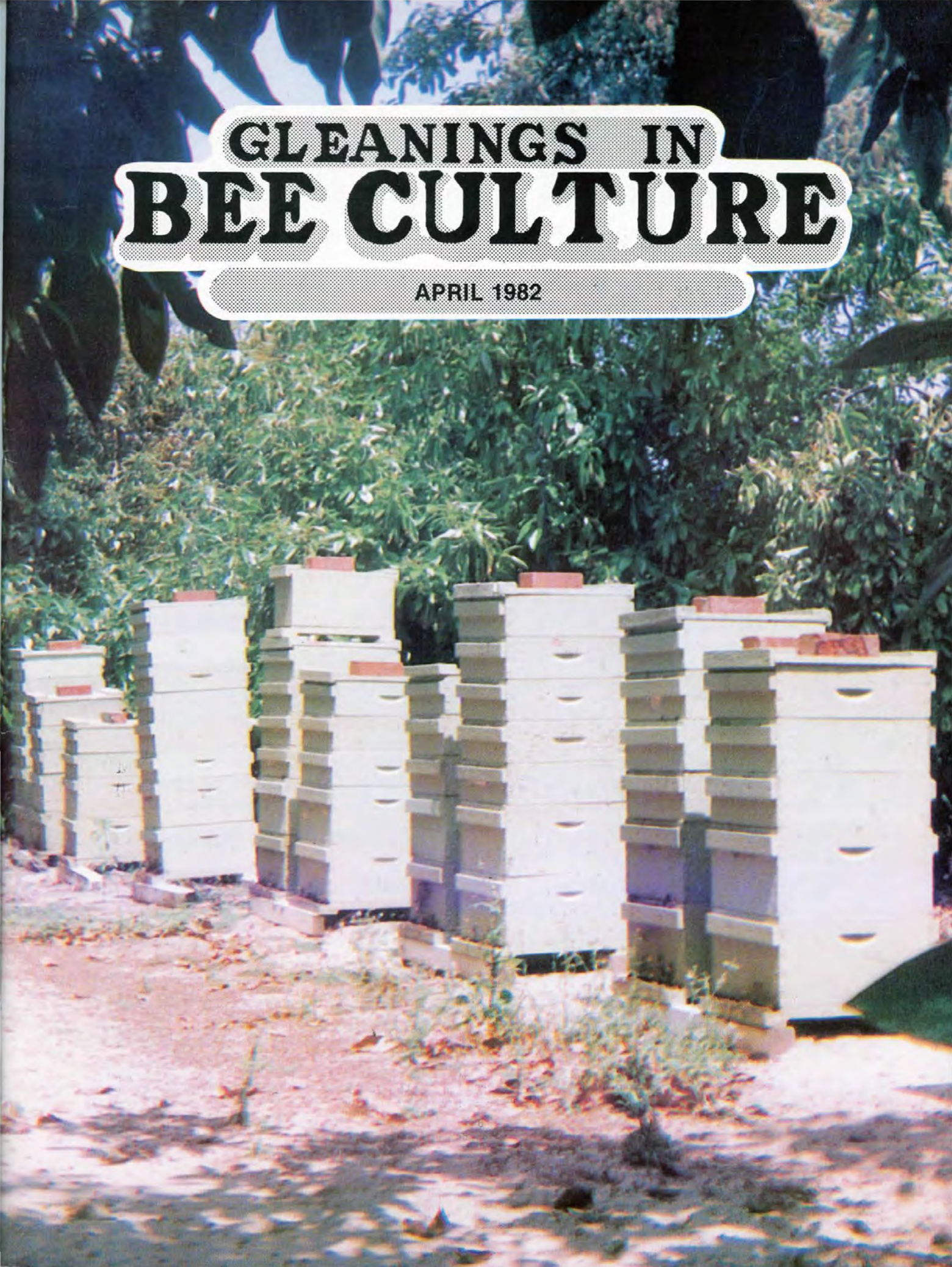


GLEANINGS IN **BEE CULTURE**

APRIL 1982

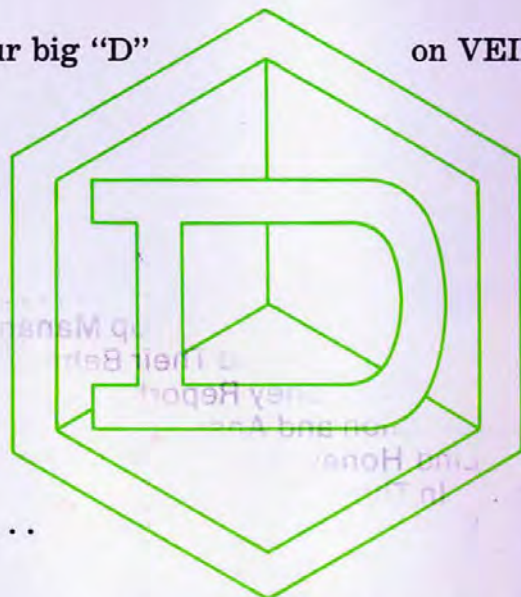


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COVER STORY

This is the prize winning scenic photo from the 1981 Western Apicultural Society Photography Contest. It was entered by Peter Meursing of Downey, California and won the A.I. Root Award given for the best scenic photograph. These hives are painted a light green color to blend in with the avocado grove where they are located.



April 1982

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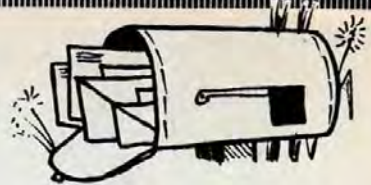
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Gleanings Mail Box



Promoting Bee Forage

Dear Editor:

I thought you may be interested in a resolution I drew up and was adapted at the New Jersey Agriculture Society Convention held in Cherry Hill, NJ.

Perhaps it would inspire States that do not encourage the planting of "bee forage" to do so.

The trend toward urbanization of New Jersey has removed large areas of vegetation that were conducive to the propagation and survival of beneficial insects.

The types of vegetation which are conducive to the survival of these insects such as linden trees, vetch, clover and many other plants of a similar nature do not require mowing or cutting.

Moreover, the Department of Transportation has curtailed its practice of regular mowing of roadside vegetation.

THEREFORE BE IT RESOLVED, that we, the delegates to the 67th State Agriculture Convention assembled in Cherry Hill, New Jersey, January 28, 1982, call upon all state agencies undertaking reseeding programs to use the recommended plant materials that support beneficial insects.

BE IT FURTHER RESOLVED, that copies of this resolution be transmitted to the Governor and all members of the Governor's Cabinet.

Edward J. Littig
P.O. Box 306
Lakehurst, NJ 08733

Cause Of Granulation

Dear Editor:

In January *Gleanings* "Question and Answers" E.N. of Nova Scotia Canada is having trouble drying his extracted combs. I would suggest that he put the extracted supers under the brood chamber instead of on top of the honey. I realize it is quite a chore, but as for myself I keep my bees in a building, and have an elec-

tric hoist to raise the whole stack of supers at one time to slide in the extracted super.

Also, R.B. of Wisconsin is having trouble with granulated honey. If he has a good flow of dandelion nectar he will find that is his problem. I have found if I extract the honey right after the flow is over, about the middle of June, I can get most of the honey out of the combs. The end of June is already too late. Dandelion honey is quite heavy and the combs will never clean readily.

I trust that this information will be helpful.

Clarence R. Yahm
Pleasant Corners, PA

Mystery Honey

Dear Editor:

I need your urgent assistance to solve the problem of the mystery honey from the mystery state!

In response to my article in the November 1981 issue of *Gleanings*, "I'm a Nectar Collector, Part II," I received a number of pleasant and spontaneous surprises including, via parcel post on November 20, a small package the size of a section comb honey box, 92¢ postage, containing an unlabelled bottle of honey, grossing five ounces. It was posted on November 2 (the rest of the postmark was illegible) without a return address nor an enclosed note; hence, I call it my "mystery" honey from a "mystery" state.

Since the anticipated follow-up letter has not arrived, I am now appealing to you to print this note because I would like to thank the surprise sender and ascertain whether my state collection has grown by one to 35 and my nectar holdings to 47 different varieties. (Oh, yes, I now have 24 international honeys on hand.)

J. Iannuzzi
RFD 4
Ellicott City, MD 21043

Sioux Bee Replaces Top Management

In a recent move the Sioux Honey Association replaced DeWayne L. "Buzz" Barrett, president and general manager and Charles V. Boyle, vice-president, marketing.

Gary Evans, former executive vice-president replaced Mr. Barrett. Larry Schuetz will temporarily fill the position of head of marketing which was held by Mr. Boyle.

The decision to change management came at a board meeting of Sioux directors on February 15th according to one source of information.

Mr. Barrett became president of Sioux Honey Association on July 1,

1981 upon the retirement of Robert Steele. He had been with the cooperative for forty years, fourteen years as an assistant to Mr. Steele.

Mr. Evans has been employed by Sioux Bee since 1958. At different times he has been manager of the Umatilla branch and assistant manager of the Waycross, Georgia branch. At the Sioux City plant he has had various responsibilities, including director of field production, director of member relations, vice president of administration and executive vice president.

Sioux Honey Association has its main plant in Sioux City, Iowa.

Food Scouts And Their Behavior

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

If nectar is the bee world's gold, then bees, like men in poor pay fields, have fortunately not been told to judge by superficial yields.

DURING THE FIRST week of July this year my bees here in the Hudson Valley of New York State sounded as though they were getting an abundance of nectar. When I opened the hives, the good-sized areas of newly sealed comb were in line with their enthusiasm at the hive entrance.

So I took a little time to tour the territory within a half mile of the bee yard to see what their sources were. I found varying numbers working on sumac (variously known as low sumac, dwarf sumac, and mountain sumac), basswood, nettle, birdsfoot trefoil, milkweed, yellow sweet clover, white sweet clover, and purple loosestrife. I'm sure there were addi-

I remembered that Ribbands (1953) had accumulated considerable information on the subject. He said that his book was a consequence of the work of Prof. Karl von Frisch. But Ribbands added his own findings to that of von Frisch and many others.

When I noted that every good nectar source within a half mile radius of my bee yard boasted at least one or two gatherers, I observed also that some seemed to have attracted more or fewer than the quality and quantity of their nectar seemed to justify.

For example, a small cluster of nettle blossoms (not more than a dozen stalks of blooms) had attracted two workers. I guessed that maybe this was due to their proximity to the bee yard. I assumed, perhaps unwisely, that some young gatherer on her first trip had blundered onto these flowers. However, five days later these same stalks of nettle had drawn the same number of gatherers.

needs. Why, then, so much attention from so many bees when so many other blooms appeared to have more to offer?

Research on Searching

I turned to Ribband's book on the *Behavior and Social Life of Honeybees* (1953). I find it comforting to be able to consult a source such as this because it attempts to provide reliable information on questions on which I otherwise have a tendency to guess.

Ribbands quotes Lindauer (1952) as reporting that in an experiment carried on by him, only 9 out of 159 individually marked bees commenced to forage without being seen to follow a dance first.

If this is typical (and Lindauer is a very reliable researcher) there is much more dependency on scout

"The function of the food scout in a colony of honeybees may be of greater importance than is commonly believe."

tional sources but these were the chief ones.

Bees in this area at this time of year are faced with much more than a typical problem in locating the better nectar sources. Here's why. So many of the blooms are isolated. For example, the sumac and the basswood are numerous, but scattered. In many locations there's just one group of sumac bushes, and each basswood tree tends to be all by itself, and maybe two hundred yards from another like itself.

This tendency to isolation is somewhat true also of the birdsfoot trefoil, the nettle, milkweed, and the clovers. Only the purple loosestrife offers flowers in close proximity to each other, and over extensive acreage.

How do the bees manage to find these many isolated sources? And do they work them in equal numbers?

My observations of a high degree of isolation of all of these nectar sources except the loosestrife turned my thoughts to scout bees, and to the questions of the part they play, their number, their ages, and their influence on the rank and file gatherer.

Maybe nettle is especially attractive.

Birdsfoot trefoil is not noted for the abundance of its nectar yield, but it had enticed its quota of workers. Maybe a recent rain, added to its yellow flowers — a color always attractive to honeybees — was serving its purpose well.

The two best sources (best in my judgment), the sumac blooms, and the basswood flowers, were being patronized very moderately.

When I came to the purple loosestrife growth I was amazed at the comparatively large number of workers the huge patch had attracted. This plant is notoriously a low yielder locally. Only once in thirty years have I observed a sizeable surplus from this source in the hives. It is honey easy to identify because of its dark green color. The flavor, however, seems to be pleasant. The comb honey I took off following this exploratory trip revealed the presence of no loosestrife nectar.

I have always known of its value as a source to keep the bees busy between July 15 and the coming on of goldenrod and aster, but colonies almost never accumulate anything more than their current minimal

bees by the rank and file worker than would ordinarily be imagined. In a recent study, Seeley, Morse, and Visscher (1979) estimate the percentage of new-homesite scouts as approximately 5% of the whole working force. It seems reasonable to assume that the percentage of food scouts may be rather much the same.

Some researchers have suggested that the great numbers of worker bees in a colony may be divided into searchers and collectors. But Bonnier and Oettingen-Spielberg have shown that searchers become collectors and vice versa.

This later finding suggests two conclusions: A relatively small number of workers assume the responsibility of scout; but any successful gatherer, if so disposed (as some are not) may assume the function. Also, there are a considerable number who never take on such responsibility.

Elizabeth Opfinger (1949) suggested that foragers might be divided into three categories. There were (a) bees which adhered faithfully even to very sparse crop sources, (b) the majority of bees which remained true to a source so long as the food supply

(Continued on page 188)

Food Scouts And Their Behavior

(Continued from page 187)

was normal but were retrainable to another source if the crop failed, (c) a very few bees which were especially restless and were always searching here and there and discovering new source of food.

Do Opfinger's findings have any application to my thinking it surprising that so many of my bees were working on purple loosestrife, only a very moderate yielder of nectar, when plenty of sumac and basswood (presumably better yielders) were available?

Perhaps. It is very conceivable that many of my bees had discovered the purple loosestrife shortly before low sumac (the best yielder of all the sumacs) and the basswood had come into bloom. It evidently yielded just enough to keep them from succumbing to the dances of the scouts who were advertising the nectar wealths to be found in sumac and basswood.

I venture to add one theory of my own for the popularity of the loosestrife: it was abundant; it was not isolated, one bloom from another; its acreage was extensive — thirty acres or more. That kind of availability encourages faithfulness to it on the part of the worker bee. Bonnier (1905-1906) showed that when a bee became attached to a crop it was not easy to lure her away even when richer nectar sources were available.

Bonnier observed also that dishes containing honey when put out at sunrise attracted more bees than comparable dishes exposed towards the end of the morning. Herein, I think, we have a very positive lesson for beekeepers when locating their bee yards. Some shade may be desirable in warm climates. Wind breaks as provided by trees are very valuable especially in cold regions. But the colony that is so located that its entrance does not catch the early rays of the sun, will dispatch its scouts later than one that is so exposed. Thus, valuable time is lost. The next time you go to your bee yard, observe how much longer in the hot summer mornings the bees clustered outside of the hive that is shaded take before becoming part of the working force. Just this week I visited my yard of bees at 9:30 a.m. DST. Some of the hives were partially shaded from the early sun. The workers in these hives in many cases had not yet gone afield.

But the limited reading I have engaged in has not yet provided me with a full explanation of the details that make up the process of finding nectar sources under the conditions of isolation which I have described as prevailing here in this part of the Hudson Valley.

Almost any honeybee gatherer with a low I.Q. should be able to find a thirty acre stretch of purple loosestrife. But how bees seldom seem to fail to find an isolated sumac or basswood in the midst of many acres of non-nectar bearing hardwoods somewhat amazes me. I suspect we have not yet fully investigated the role assumed by the scout bee.

Therese Oettingen-Spielberg (1949) has shown that very few of the foragers in a colony search for new crops; nearly all wait to respond to the dances of successful colleagues.

Somehow this is not exactly what the typical beekeeper thinks is taking place. But if we will examine the scouting process of a colony in its search for a new home before swarming, in which we know that only a comparatively few participate, we can better understand the significance of the work performed by the gatherers that serve as nectar and pollen scouts.

Oettingen-Spielberg studied the ages of scouts to see what their maturities and degrees of experience were. She found that the scout bees were not a special age group, and that both inexperienced and experienced foragers could act as scouts.

Aroma Versus Color

An interesting aside to this whole question can be found in the fact that whereas an individual bee first identifies a flower, in most cases, through its shape and color, it is usually its aroma which finally reveals to the bee whether it possesses nectar resources. Also, the dancing bee communicates nothing at all about the color of a nectar source. Thus, it would appear that upon initially finding a bloom which a dancer has advertised, the searcher proceeds to determine whether the nectar present possesses the same aroma as that communicated by the dancer. It is only after such a confirmation, and after gathering a quantity of the nectar,

that the gatherer establishes an association between the particular nectar and the color and shape of the flower which yielded it. Thus, the learning of color and shape of the nectar source is secondary.

Pollen Gathering

Honeybees are believed by most people to be totally faithful to one crop when gathering nectar or pollen.

Generally speaking, honeybees are constant in their loyalty to any one source, but this is not universally true. Different researchers have confirmed the fact that pollen loads (in which a difference in sources is easier to detect than with nectar), show a mixture in approximately three percent of the cases. This includes only cases in which the admixture was considerable, and not the consequence of accident, or left-over residues from previous trips.

Foraging Areas

Constancy in gathering from a small area by any one honeybee is an interesting study.

Several researchers, including Bonnier (1906) have told us that they have observed marked bees repeatedly returning not only to the same species of plant, but to small areas of such plants — and in a few cases to the same plant of a species.

Of course there are certain factors which need to be present in order to encourage such repetition of visits by an individual bee. These include continuation of availability of nectar, and lack of too great competition from other gatherers.

One disadvantage to humans from such a high degree of faithfulness by the honeybee is illustrated in instances in which a fruit grower plants his varieties in blocks with considerable distances between self-sterile and compatible varieties.

One can understand that if a colony is populated with a large percentage of individuals who are extreme in such constancy, its gathering potential is lowered. We have already noted that the same condition may prevail in the case of a colony whose members are content to forage on marginal or submarginal nectar sources such as purple loosestrife.

(Continued on page 190)

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Food Scouts And Their Behavior

(Continued from page 188)

Not all bees, fortunately, are so extreme in their loyalty. Often, when an individual bee has made a switch (as many are compelled to do), she will subsequently return to determine if there has been a renewal of supply.

Pollen Gatherers Versus Nectar Gatherers

Researchers have not found any set sequence in gathering of the four items which honeybees collect and return to the hive: nectar, pollen, propolis, and water.

Nor do all bees divide themselves into neat categories of gatherers of these four items. Some gather all, some one, some another. It is believed, however, that under stress of need any bee will gather any one of these items.

Ribbands (1949) found that bees prefer nectar crops to pollen crops even if twenty times as long a period is necessary to gather a nectar load. Gatherers often switch from pollen collecting to nectar accumulating, but seldom vice versa.

When nectar is abundant, nectar gatherers are able to complete a collecting trip faster than pollen gatherers, but availability can change this. Park (1922) found that the kind of pollen being collected greatly affects the weight of the load accumulated by a bee. The pollen load may vary from 1/5 to 1/3 of the bee's weight. Nectar loads usually weigh more, and at the greatest amount may be nearly equal to that of the bee doing the carrying.

Ribbands (1949) observed a forager that visited 1,446 flowers on one trip over a period of 106 minutes. I have often observed gatherers working on wild thyme blooms. The number visited must be many since the length of any one visit is minimal. I believe such gathering conditions contribute to making workers irritable. Usually, the number of visits needed to secure a load of pollen is less than for gathering a load of nectar.

Gathering time both for nectar and for pollen varies with the flower, and the current condition of the plants. The presence of adequate ground moisture usually increases the availability of nectar.

Naturally, the number of trips made in a given day will depend on several

factors, including how early the first morning trip was made. Lunden (1914) found that his marked bees made ten daily trips during a heavy flow from white sweet clover.

I always feel bad to see the wind blow hard during a nectar flow. If the wind is too violent, gatherers in some instances will remain at home. But usually they labor under adverse gathering conditions during windy days, especially when working such exposed blooms as basswood. Interestingly, researchers have found that gatherers when returning to the nest with a load, fly faster when the wind is blowing against them than when it is not.

Eckert (1933) found that gatherers do not plan or execute their foraging flights most advantageously in terms of the direction in which the wind is blowing. He made interesting observations too about the extent to which individual colonies of bees gather from a particular source while an adjacent colony gathers almost totally from a different local source.

Many beekeepers today believe that the variation of nectar sources emphasized by each individual colony goes a long way toward determining its colony odor.

Finding The Way

Traveling to discover a rewarding growth of nectar-bearing blooms and getting back to the hive, present a problem for each individual gatherer.

Whereas a human, especially a youthful human, may be able to be set right by another on where he or she is, and what direction home is from that point, each honeybee gatherer must provide her own directions. Honeybees may have some built-in direction finder such as guides the homing pigeon, but researchers have shown that bees use several natural means to direct them.

Color helps in identification of the hive. The individual odor of the nest helps to confirm what the color has already suggested.

In homecoming the bee makes use extensively of landmarks such as bodies of water, acreages of trees, lone trees, rocks, ridges, buildings, and the like. When the hive is moved during the absence of a worker, movement of the hive to the right or left is more confusing to the returning bee

than a few feet forward or backward.

Ribbands and Nancy Speirs (1953) found young bees as able to orient as experienced fliers when the entrances to their hives were changed in position. Colony odor seemed to play a significant part in guiding the foragers back to their respective hive entrances. Fanning with exposure of the scent glands by those returning early seemed to assist those returning later.

You and I know from our observations, however, that foragers of any age upon return to a nest whose location and whose entrances have not been altered, seem to find the proper entrance without evident reference either to color or odor. They know the correct entrance even if it be but a few inches from another which they seem never prompted to enter. They come winging in from the sky and go without hesitation to the right place. Color and aroma appear to be auxiliary agents, not primary ones.

Have you observed how stubbornly a bee initially accustomed to the use of a rear entrance to a hive will continue to use it when a front entrance is subsequently provided which appears (to the human eye) to be a "handier" approach?

Food Sharing

The gathering inclination of a bee is often naturally influenced by its recent tasting experience in consuming a food that provided an unusual pleasure. Scouts take advantage of this fact by sharing a tiny morsel of a nectar which they have found attractive enough to warrant their dancing about it. They instinctually know the added lure of giving a potential follower a sample.

Humans who wish to recruit foragers to a particular crop follow a similar procedure when they feed a colony an extract of the flower which they wish to have visited. This appears to be very effective if carried out early in the morning at which time it seems to have an influence somewhat comparable to the giving of a sample of nectar by a scout.

Recognition Of Co-workers

Exchange of food between adult bees tends to add to colony cohesiveness chiefly because it pro-

(Continued on page 196)

GLEANINGS IN BEE CULTURE

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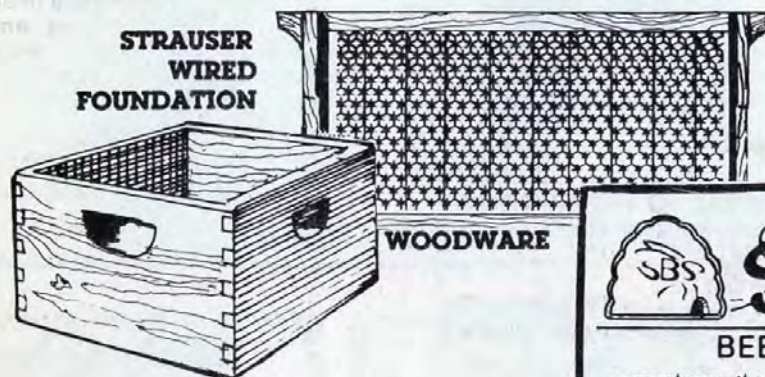
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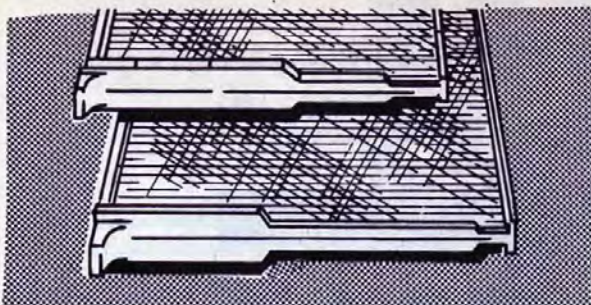
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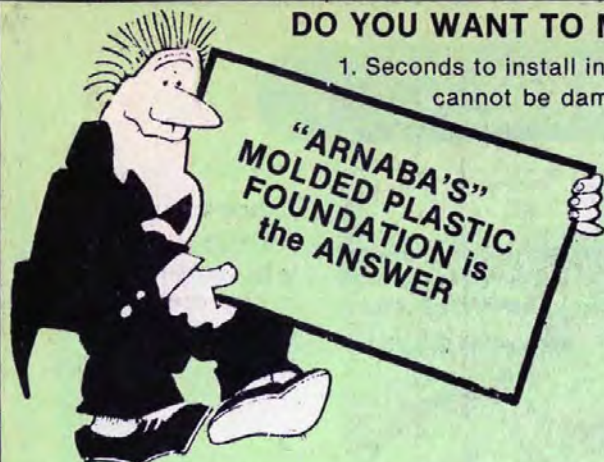
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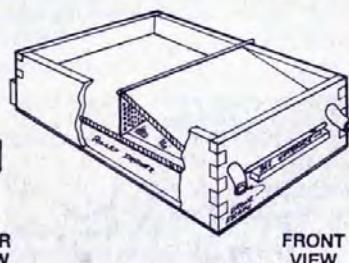
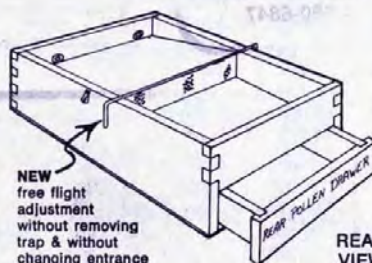
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Monthly HONEY Report

LAWRENCE GOLTZ

March 10, 1982

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

Wholesale Extracted

Reporting Regions

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

	1	2	3	4	5	6	7	8	9
60 lbs. (per can) White	42.00	34.00	39.00		38.90	38.50	32.00	36.00	34.50
60 lbs. (per can) Amber	42.00	30.00	37.20		36.00	36.00	30.00	35.00	33.50
55 gal. drum (per lb.) White		.56	.60		.58	.60	.55	.58	
55 gal. drum (per lb.) Amber		.48	.57		.53	.57	.46	.57	
Caselots — Wholesale									
1 lb. jar (case of 24)	26.50	24.90	25.80		27.60	24.00	28.50	24.50	24.00
2 lb. jar (case of 12)	26.00	23.30	24.20		27.60	22.75	26.00	22.75	23.50
5 lb. jar (case of 6)	30.00	27.80	26.25			25.00	24.90	26.00	26.00
Retail Honey Prices									
½ lb.	.90	.85	.90		.75	.85	.87	.89	.99
12 oz. Squeeze Bottle	1.50	1.30	1.30		1.59	1.30	1.59	1.40	1.39
1 lb.	1.50	1.40	1.35		1.70	1.50	1.49	1.49	1.55
2 lb.	2.70	2.65	2.65		2.69	2.50	2.59	2.59	3.10
2½ lb.	3.15				3.38	3.15			
3 lb.	4.00	3.85			4.79	3.75		3.65	4.10
4 lb.	5.00	4.95				4.80	4.30	4.80	
5 lb.	6.00	5.75	5.25		5.69	5.50	5.15	5.95	6.50
1 lb. Creamed							1.60	1.59	1.70
1 lb. Comb	1.75	1.80			1.50	1.75	1.79		
Round Plastic Comb	1.50						1.60		
Beeswax (Light)	2.10	1.90	2.00		2.00	1.95	1.80	1.75	1.85
Beeswax (Dark)	2.00	1.80	1.90		1.90	1.90	1.75	1.70	1.75
Pollination Fee (Ave. Per Colony)	30.00	22.50	25.00		18.00		18.00		18.00

Misc. Comments:

Region 1

Very good bee flights in mid-February will help to bring bees through winter. Ground moisture is very good. About 5% of 1981 honey crop remains unsold. Early feeding during warm breaks. Bees wintering well in Vermont. Much snow and cold. Honey market fair.

Region 2

Several warm periods during February helped bees in New York state. Most of New York state had adequate moisture during winter. Bees in good condition in central Maryland and losses are few. Heavier colony losses in western Maryland. Honey demand is good. About 10% winter loss in West Virginia. Good bee flights in late February. Honey prices steady. Bees wintering well in Pennsylvania but some feeding need-



ed. Honey sales holding steady during winter.

Region 3

Heavy winter losses being reported in Illinois due to poor fall honey flow and severe winter weather. Feeding is in progress. Bees rearing brood by March 1st in Illinois. Too early to tell how bees wintered in Wisconsin. Much snow cover and cold temperatures. Bees in Indiana are looking good where honey was stored

last season and where large clusters went into winter. Some colonies fair to poor condition with stress from not having flights during winter months. Honey sales in Indiana has picked up. Ohio winter loss is moderate despite cold winter. Much snow and ice. Many colonies may need feeding as spring brood rearing begins.

Region 5

Very bad winter conditions have hurt colonies in the Piedmont region of North Carolina. Areas of state that had warm spells have bees in better condition. Bees had cleansing flights in February. Colonies will need feeding this spring.

Region 6

February was very cold in Kentucky during first two weeks but warmed up later in month and bees became ac-

(Continued on page 217)

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SUPERS	10	100
(All millwork guaranteed 20/1000" tolerance)	9 5/8" 4.85 ea.	4.65 ea.
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Q. What do foundation manufacturers do to sterilize wax used in manufacturing the foundation so that foulbrood and other diseases won't be disseminated in the foundation?

I have a hive on the ground about 75 feet from a chimney venting and "air-tight" wood stove. The top of the chimney is about 20 feet above the ground. Occasionally, I would say about an average of one day a week during winter, the wind is in just such a direction and strength that a small amount of diluted smoke every once in a while drifts around and past the hive. Temperatures vary a good deal here in winter, but most of the time the bees are not flying, either due to cold or cloudiness. Would you think that this amount of smoke would be likely to have any significant effect on the bees? R.W. Florida.

A. In answer to your first question, we believe that heating and processing the wax for foundation at 185-190 degrees F. seals the spores of foulbrood, if any exists, in the wax, preventing them from becoming active. We know of no case of AFB that has resulted from foundation.

I doubt if you need be concerned about the smoke harming the colony of bees. It is unlikely to be concentrated at a level high enough to harm the bees.

Q. If for any reason, other than disease, a hive of bees should die during the winter could I install a package of new bees in this hive after I have cleaned out all the dead bees? Should there be honey left could I just leave it for the new bees, even if it were granulated? Would I need to remove some sections for room? Should I put the top body on too?

Would I need to feed sugar water even though there would be plenty of honey left in the hive bodies?

What can I do with honey that granulates in the section boxes? Is there a way to feed it back to the bees? B.F. Pennsylvania.

A. Yes, it is an excellent idea to install a package of bees in a hive after the colony has been winter-killed. If a

supply of honey remains so much the better and supplementary feeding will not be necessary as long as the supply of honey is present. Be certain to close up the hive tightly to prevent mice and robbing bees from entering the vacant hive or store it in a closed building. Moth damage does not usually occur during the interval in the early spring while waiting for the package of bees to arrive. Honey granulation is not a serious handicap to the newly installed package if the weather is warm. They will be able to use at least a portion of it and will remove the rest from the cells. Keep the hive at one story and add the second brood chamber only after the colony has become well established in the single hive body; this usually takes about 6 to 8 weeks after the package is installed.

Honey which has granulated in section boxes can only be fed back to the bees and this may be safely done if you know that the sections were taken from colonies which were free

of any disease. Cut the sections from the boxes or simply uncap those cells which are sealed and stack the sections in an empty super shell BELOW the brood chamber(s) of a strong colony in the spring. Support the pieces of comb or the stacked sections to be cleaned out on a queen excluder or other type of screen support placed on the bottom board. The strong colony will clean out the honey in short order but keep an eye on the proceeding for a few hours to be certain that robbing does not begin. The entrance may be closed down to a small opening to a day or two while the honey is being carried up into the brood chambers, or is removed from the cells and discarded.

Q. I would like to try my hand at pollen trapping for use in the diet. I understand the need to collect the pollen each day but am uncertain

(Continued on page 201)

Food Scouts And Their Behavior

(Continued from page 190)

motes recognition. Kalmus and Ribbands (1952) found that foragers from a fed nucleus were better able to identify their co-workers (hive companions) than were members of an unfed nucleus.

Scouting For Food Vs. Scouting For A Nest Site

Investigation to date would suggest that gatherers do not intersperse site searching among their food searching activities on any particular day. An experienced forager may take up site searching. But this is believed to be a purposeful act and not associated at the time with any other activity. A food gatherer, on the other hand, may make a food discovery accidentally, or through exploratory effort, which she finds too good to keep to herself, and she thus becomes a scout.

The function of the food scout in a colony of honeybees may be of greater importance than is commonly believed. It deserves further study. □

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Lind Honey Company, Inc. In Third Generation

Condensed from the *Vernal Express* of April 9, 1981, feature article titled "Honey Business Goes Into Third Generation".

LIND HONEY COMPANY, INC. is one of the oldest businesses in Vernal, Utah. It is in the third generation, having been founded by Lewis Peter Lind in 1879. The first Lind to enter the Ashley Valley was Lewis, born in Denmark. He and his brother brought two hives with bees, but it was not until 1892 that Lewis went into the beekeeping business.

Lewis's son, Elmer, was born in 1894 and grew up in the family bee business. Elmer engaged in several business ventures until 1930, on which date he moved to the Lind property in Dry Fork Canyon and began his bee business in combination with sheep rearing. Elmer was the bee inspector for the east side of Uintah County from 1957 through 1967.

The third generation of Linds began with Rulon Lind who was born in 1923. Rulon grew up with the beekeeping on his family's property in Dry Fork Canyon, interrupted by service in WW II. He presently resides in Richfield, Utah, where there is a small Lind's Vernal Honey Plant. Rulon is a bee inspector for the east side of Uintah, County.

The Lind Honey Company has bees for both honey production and for pollinating. Honey is packed as Lind's Vernal Honey which is shipped over most of the United States.

Much of the honey produced is from the alfalfa and clovers of the Ashley Valley of Utah. 1980 was a poor year due to extensive pesticide damage to the bees from applications for the alfalfa weevil. The diverting of land from agriculture to other uses has considerably reduced the available bee pasture. "It used to be we could put one hundred colonies of bees in an area, but now we are lucky if we can put thirty in a location," says Elmer Lind.

Elvyn Bascom and Bill Wheeler are friends of the Linds and help them during harvest time. Born and raised in Vernal, Elvyn has been around bees since he was thirteen years old. He is now a bee inspector for the west side of his home county. Bill Wheeler, in the construction business, also assists the Linds during peak work loads.

A newly constructed honey house which serves the Linds is located on the west side of Vernal, Utah. Creamed honey is one of the products. Bees are trucked to pollinate the almonds in California, fruit trees, and alfalfa for seed. □



Elmer Lind poses in the hot room of Vernal Honey.



The newly constructed honey house of Lind Honey Company. Rulon Lind, Left and Elvyn Bascom, Right are posed beside the honey company's semi-truck.



Pictured here are, front, left to right, Elmer and Rulon Lind; back row, Elvyn Bascom and Bill Wheeler.

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Questions and Answers

(Continued from page 196)

about storing it. I have a freezer that can be used but this does not appear to be a long term solution. How do you dry it to prevent it from spoiling? Would it be possible to dry it in a microwave oven. At what temperature in a conventional oven can pollen be dried without damaging the pollen? C.M. Rhode Island.

A. Trapped pollen need not be collected every day if the weather is dry, but with our damp climate in Ohio I find that this is sometimes necessary.

The freshly gathered pollen may be collected from the trap, the debris removed, if any is present, and the pollen placed in a paper or plastic container and frozen at deep freeze temperatures. Some claim that this causes the pollen grain to burst and they do not recommend this method. The most orderly process is to collect the pollen, clean it as thoroughly as possible in the collected state and then allow it to dry a few days at room temperature spread out on a piece of paper. When the pollen is sufficiently dried to the point where the individual clumps do not cling together when squeezed between the thumb and finger the pollen may be placed in either a brown paper sack or other container and placed in the refrigerator for storage. It is not necessary to keep it in the freezer compartment. Additional cleaning may be done after the air drying, if necessary, by directing a stream of air through the pollen as it is poured from one container to another.

In answer to your question, it is possible to dry the pollen immediately after collecting by placing it in a microwave or a conventional oven. Follow the operating instructions in using the microwave oven using a setting that will give the very minimum exposure for drying only. In a conventional oven the maximum heat should be 110 degrees F. Allow the pollen to dry only as long as needed to bring the moisture content down to about 20%, or, again using the squeeze test, to the point where the pollen does not clump when pressed together in the hand. Overheating or leaving in a dryer too long will destroy the nutritional value of the pollen.

The simplest way is to gather the pollen from the pollen collector tray,

clean it as much as possible by hand, place it in a brown paper sack, seal, and store it in the refrigerator door shelf where it will always be preserved, ready for use. After all, the purpose of collecting pollen is to use pollen daily as a food supplement and in this way it will always be available, safely preserved and nutritious. The commercial handling of pollen is perhaps a more refined procedure but the pollen is no more nutritious than that which is properly cared for at home using one of the above methods.

Q. I keep two to five hives of bees in central Texas and have a severe problem about which I have found very little written in the bee journals.

Fire ants in this area are a plague on everyone and are becoming a real nuisance to me and some fellow beekeepers. We have put out poison on their mounds, poured oil around our hives and have put out traps which contain poison to be carried back to the mounds. Thus far the traps have worked best but unless they are constantly checked they quickly become ineffective. Fire ants propagate with great efficiency. A one and one half foot mound will appear out of nowhere in three to five days.

Aside from the extremely painful bites and subsequent pustules I believe the ants are the cause of several of my colonies absconding. I had several healthy, strong colonies, but due to other obligations I was not able to check them for a period of time and when I did they were gone. There was no sign of die-off or of wax moths. There was plenty of honey and what was left of the brood after the ants finished with it. No disease was in evident. This almost exact thing happened to two fellow beekeepers.

Have you had other reports of this problem and do you know of a more effective method of control? B.R. Texas.

A. Strangely, we have not heard of this problem before and of course we do not have to contend with fire ants here in the North. We wrote to Dr. John T. Ambrose, Extension Apiculturist in North Carolina who sent us the following information:

"Several years ago (about 4 years), I did some work on the effect of fire

ants on honeybee colonies. In that work I moved eight colonies into an area that was heavily populated by fire ant mounds. The test colonies were actually placed on top of or in contact with the mounds and the control colonies were placed at least 100 yards from any fire ant mounds. The colonies were left in place from early March through August of that year.

During the test period we monitored honey production, brood production and aggressiveness of the colonies. There were no differences in any of these parameters between the test and control colonies.

One interesting observation involves the initial reaction of the bees and ants to each other when the test colonies were placed in contact with the fire ant mounds. Almost immediately the ants would rush out and climb up onto the entrance board of the beehives. There would be some fighting, biting, and stinging between the bees and ants on the entrance board but it never lasted for more than two or three minutes. After that initial encounter, the ants and the bees did not again come into contact with each other, at least not on the entrance board or in the hives where we could observe them.

I should mention in passing that even though the ants did not seem to cause any real problems for the bees. It could be a different story for the beekeeper. The ant can give a very painful sting and they will quickly attack a person if he steps on one of their mounds."

In regard to controls we suggest you contact your County Agricultural Extension Agent who would have the latest and most effective control measures, reminding him of course that the safety of the bees must be assured during the attempt to eradicate the fire ants. □

B. C.'s Bees

The owner and operator of B.C.'s Bees, Bruce C. Otte, has announced that he has moved his honeybee queen rearing operation from Indiana to Karnes City, Texas.

Information on booking, terms, mail delivery or pick up arrangements will be provided beekeepers if they call telephone number 512-780-3521 or write to B.C.'s Bees, Route 2, Box 99A, Karnes City, Texas 78118.

Research Review

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



Miscellaneous Notes From the American Beekeeping Federation Meeting in Georgia

JAMES POWERS, of Power's Apiaries, told me that changes in the use of pesticides have made it possible for him to keep bees successfully in Arizona again. He emphasized that things were far from perfect but they were much improved over the situation a few years ago. Recently developed insecticides, synthetic pyrethroids, will repel bees and keep them out of fields in flower. This phenomena was first noted by Lawrence Atkins of the University of California at Riverside and he has done much research on the subject. If the spraying of synthetic pyrethroids on crops is done at night, no bees will be killed; however, if they are applied during the daytime, when bees are flying, the death rate among honeybees can be high before the repellent effect takes place.

The use of pheromone traps to catch boll weevils has also helped the situation in Arizona, according to Powers. During the 1960's the use of insecticides cut the number of colonies of bees in Arizona by more than half. Changes that limit the number of bee kills are very good news for the beekeepers in that area.

Steve Taber III lectured on breeding American foulbrood resistance into queens. He pointed out there are two behavioral characteristics, both discovered by Dr. Walter Rothenbuhler of Ohio State University many years ago, that provide resistance in a colony. One is the worker bee's ability to uncap cells containing dead brood, and the other is their ability to remove the dead brood and discard it from the hive. Taber said it is a straightforward task to find bees that

have both of these characteristics. His studies showed that they are present in about five per cent of honeybee colonies. Through selective breeding it is not difficult, he said, to produce queens that will have offspring in which seventy-five per cent or more of the worker bees will have this ability, thus making the colonies disease resistant. Colonies resistant to American foulbrood will also show resistance to European foulbrood and sacbrood. He did not mention it, but they might also be useful in controlling varroa disease.

I was also interested to meet Susan Cobey and Timothy Lawrence, who have started an instrumental insemination service. They live in Baton Rouge, Louisiana, and offer to travel with their equipment to inseminate virgin queens for breeders throughout the southern states. I thought their rates were quite reasonable. Their literature is available by writing P.O. Box 16908, Baton Rouge, Louisiana 70893. This is the first time a traveling service of this nature has been offered.

Dr. Anita Collins of the USDA Bee Breeding and Stock Center in Baton Rouge has found a way to measure aggressiveness in bees. While it has been apparent for some time that Africanized bees in South America are more aggressive than our own bees, no one has been able to attach figures to these differences and to measure what is taking place. Dr. Collins showed that the time required for bees to respond to an attack on their hive, as well as the number of bees responding, is quite different in the two races of bees. She emphasized that there is great variation in the Africanized bees in South America, with some colonies being far less aggressive than others. Whenever one sees variation there is a good possibility that selective breeding can be used to improve a situation. In

the long run this may prove to be the salvation of beekeeping areas in South and Central America invaded by African bees.

James Kuehl of Loup City, Nebraska, who has been a much sought after and enthusiastic speaker at recent state and national meetings, spoke again about indoor wintering. His system is certainly different. He makes up nucs in July with one frame of brood, adult bees and a ripe queen cell. These units are put into a dark, refrigerated room in late November and held through the winter at 47° to 49°F. to be used for honey production the following year. This allows Kuehl to kill off all of his producing colonies and to harvest all their honey. The wintered colonies are kept indoors under controlled conditions for a total of 4½ months. During that time each colony consumes about nine pounds of honey.

The Kuehl room must be kept dark at all times. If any light enters, the bees will start brood rearing. A lively question period following Kuehl's presentation brought out several points. Queens will start to lay eggs within hours of being taken out of the room. Heavy spring feeding is required with this system. Kuehl said they found it was easier to remove colonies from the room and take them to the first holding location in the dark; after 4½ months of confinement the bees were filled with fecal matter they needed to dispose of quickly.

The price of honey and the dumping on the U.S. market of great quantities of Chinese honey were discussed both from the platform and in the halls. Dr. Eric Mussen, of the University of California at Davis, reviewed the Chinese situation. It is obvious they will continue to be a big factor in the market for years to come. A major problem is that we know almost nothing about Chinese management techniques. We would like to know how much more honey that country is capable of producing. I am personally concerned about why Chinese honey contains so much iron; it is much higher in iron than honey from any other country.

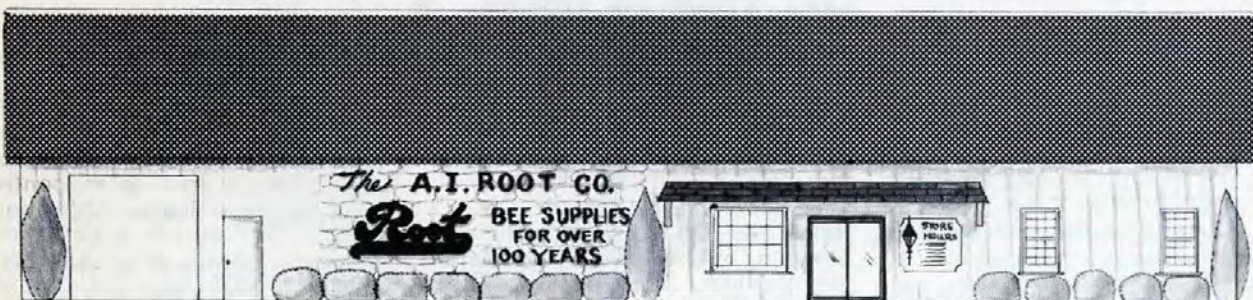
I have been able to touch on only a fraction of the talks given at the meeting. Savannah proved to be a hospitable city, with delightful temperatures for us snow birds from the North. The many excellent restaurants made the trip all the more enjoyable. The Georgia beekeepers were outstanding hosts. □

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Capping The News

THE EDITORS

"Beekeeping Small Talk"

The James I. Hambleton Memorial Award

IN 1924 James I. Hambleton became head of the Bee Culture Division of the United States Department of Agriculture. Mr. Hambleton decentralized the division by establishing field laboratories in several areas of the United States, wherever the need for specialized study was required. This was the basis of what became the Bee Management Laboratory in Wisconsin, the Bee Breeding and Stock Center, Louisiana, the Carl Hayden Bee Research Center in Arizona and the Pesticides/Diseases Research Laboratory in Wyoming.

James Hambleton was a leader in establishing the importance of the honeybee as a pollinating agent, particularly in the seed production of legumes. Many of the scientists who worked under Hambleton became well known in their own right as leaders in their special fields. The principal problems and investigations under Hambleton's leadership and the individuals who became prominent in these investigations were as follows: Bee disease (Sturtevant, Burnside, Woodrow, Holst, Hitchcock, Michael); package bees (Whitcomb, Oertel); beekeeping economics (Todd); bee breeding (Nolan, Mackensen, Roberts); honey production and wintering (Farrar); pollen utilization (Farrar, Todd, Shaefer); and pollination (Vansell, Todd, McGregor, Oertel, Woodrow, Bohart, Nye, Levin).

During the 1950's Hambleton headed the Bee Culture investigations which became, in 1952, the Division of Bee Culture and Biological Control, and in 1956, the Beekeeping and Insect Pathology Section. James I. Hambleton retired from government service in 1958.

To recognize and encourage outstanding research in apiculture conducted in North America, the James I. Hambleton Memorial Award was created by the Eastern Apicultural Society of North America, Inc.

March 1st, 1982 was deadline for submitting the nominations for the 1982 James I. Hambleton Award. This award is given for excellence in beekeeping research. *Gleanings* applauds the Eastern Apicultural Society for its leadership in recognizing the professional achievements of the past nine recipients of the James I. Hambleton Award.

To honor the memory of James I. Hambleton and to give recognition to deserving scientists in bee research, the Eastern Apicultural Society began giving the award in 1973. It is presented at the annual EAS convention to an outstanding apicultural researcher in North America selected by the nominating committee of the EAS. The award consists of an inscribed plaque, but the plaque is only a token of the deep appreciation expressed by all of the members of the Eastern Apicultural Society and beekeepers everywhere for the contributions made by the recipient to apiculture.

Nominees for the award are selected on the basis of merit and individual nominations can be made by any member of the Eastern Apicultural Society, although nominations through a University or other research institution are encouraged. Nomination proposals must be accompanied by a detailed history of the nominee's research activities, particularly during the past five years of research. Nominations and supporting information should be submitted to the J.I. Hambleton Award Committee, c/o The Eastern Apicultural Society, Dr. Robert Berthold, Chm. Biology Department, Delaware College, Doylestown, PA 18901.

Members of the J.I. Hambleton Award Committee of the EAS will individually evaluate the annual list of nominees by April the first. From among the top three ranked individuals the annual award winner will be picked. There have been nine awards given since the memorial was first given in 1973. The tenth annual award will be given at the Eastern Apicultural Society Meeting in

Morgantown, West Virginia if a 1982 nominee is selected.

E.A.S. Student Apiculture Award

The subject of awards also brought to our attention another award sponsored by the Eastern Apicultural Society. This is the EAS Student Apiculture Award, which is accompanied by a \$100 check and a suitable certificate, presented to a student, or students, studying apiculture at the undergraduate or graduate level in a recognized college or university in the United States or Canada. The James I. Hambleton Award Committee selects the individual to receive the award. March 15th of each year is the deadline for submitting nominations to the selection committee. Forms for designating nominations may be requested from Dr. Robert Berthold, Biology Department, Delaware Valley College, Doylestown, PA 18901. Nominations on behalf of candidates may be submitted by any EAS member and will be made on the basis of demonstrated excellence in apiculture. At least two letters of recommendation and other supporting information supplied by the nominee is required with each nomination.

The 1982 Eastern Apicultural Student Award will be given at the 1982 EAS meeting in Morgantown, West Virginia in August.

Gleanings In Bee Culture lends its support by bringing the news of these two awards to the attention of beekeepers who may not be members of the Eastern Apicultural Society or be aware of the nature of the awards. The student award goes to an individual(s) for the work they are doing for excellence in teaching, research, extension and beekeeping. Excellence often goes unrecognized so recognition is often a reward in itself. The EAS is deserving of thanks from the beekeeping industry for their leadership in sponsoring these awards. □

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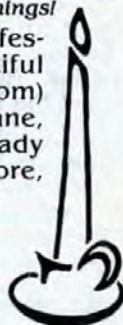
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Bee Talk

By RICHARD TAYLOR
Route #3
Trumansburg, NY 14886

WINTER NOW — late February — seems endless, and the reminders of summer, long past, are like forlorn relics of another age. A tattered oriole's nest dangles from the furthermost tips of a walnut branch that overhangs the edge of my garden. It was so very long ago that its squawking little inhabitants added their joy of living to my visits to the garden. I used to wonder how they could be so noisy and fearless without attracting predators and then I realized the answer, which gave me a fresh insight into nature's wisdom. The orioles build their nest so far out at the tips of a branch that no cat could climb out there, and its sack-like shape, laboriously woven, is a protection from hawks. Therefore its tiny and hungry dwellers can yell to their hearts' content, safe and sound, as I catch glimpses of their parents brightly flashing back and forth fetching grubs and caterpillars. The huge and aged walnut tree itself stands with stolid indifference to the seasons, seemingly immortal. It will be the last thing to turn green. Meanwhile the snow will have eroded the husks from the nuts underneath, and what the squirrels have not claimed will be mine.

The black cap bushes, too, seem reduced by winter to a meaningless tangle. It would be hard to believe that I gathered so many buckets of berries from them if it were not for the rows of jam jars in my pantry. There will be more buckets of them this summer, made tastier by my scratched limbs, which is the only price I pay for them, the same price that was paid by other men in older times.

Out in the barn the racoon waits too, his hunger becoming increasingly urgent. He becomes so desperate for food before spring mercifully saves him that he rips up my bags of corn cobs, saved for smoker fuel, demolishes any old honey comb he can find, and finally hurls hive bodies about in frustration and anger. The last time I saw him was in the fall when, filled and satisfied, he disdainfully strolled right in front of me, perfectly sure that I had no gun in my hand.

How much sweeter spring is each year for the waiting. I don't know how

this heavenly earth came about. I don't think any one really knows. But what a perfect final touch, to tilt it a bit, so that in its periodic orbit around the sun it should give us the seasons! It gives us a time to be in the sun, and another to flee from the cold, and a time to plant and tend, and another to harvest — a time for everything.

I haven't been down to look at my apiary since November, even though it is only a couple of miles away. I'm sure everything is all right there. I miss the bees, and on the first good warm day I'll be down there, to note with relief that they are coming and going at every entrance. Spring is the reawakening of life, and I know no more exciting display of it than appears under a hive cover, gently pried loose.

Every year I think I have everything just about figured out with my beekeeping, but then every winter I get some brand new idea, without fail, and that has been going on for over forty years. This winter my new idea has to do with requeening. But before I say what it is, I need to develop a bit of background.

I have always been skeptical about requeening as a regular procedure. In fact I have never done it. When I get asked to speak at beekeepers meetings around the country there is usually a question and answer period after the talk, and every time someone asks me how often I requeen my colonies, and how I go about it. I



always dread that inevitable question, because then I have to confess, with deep embarrassment, that I do not requeen them at all. I have never requeened a colony in my life. What I'm talking about here is, of course, a colony that already has a queen. And the reason I never do that is that I cannot bring myself to murder the queen bee that is already there. She is the mother of that whole colony, the very heart and soul of it, and it has always seemed to me that she deserves better than to have me pluck her out and discard her as if she were nothing. I can't do it, and I'm pretty sure I never will. It wouldn't be worth the awful feeling it would give me. So I've always figured that, if it means a little less honey for me, then I'll just make up for that by having a few extra colonies.

My friend Carl Kalthoff, however, out in Missouri, who is the best beekeeper I ever knew, told me he had considerably increased his crops by gradually requeening all his colonies, and that has been bothering me ever since. So now, finally, this winter, I've discovered how to requeen them without committing murder.

What I'll do is this. I'll split out a three frame nuc from each strong colony that looks like it might swarm, and give the nuc a nice new queen. Then a week or so later I'll go back, replace that nuc and new queen in the hive it came from, at the same time removing three combs of brood and the old queen. That way my colonies will get new queens, and the nucs I've split out will end up with the old queens. I sell those nucs, of course, and that means that the people who buy them will not be getting new queens. But that is all right; they'll be getting perfectly good queens, and their colonies, starting from nucs, won't swarm this year, and of course, I'll make clear to them that they are getting the old queens, and charge them less, accordingly. So they'll get a nice bargain, I will have solved the swarming problem, and my colonies — or at least, my stronger ones, that might have swarmed — will all have new queens. And there is another advantage, too — that method of requeening my colonies is a sure fire one. The bees will accept a new queen with a nuc and brood every time. And I don't know any other method of requeening that works much more than half the time.

So I'm pretty pleased with myself for thinking of that. It's one of the nice things about beekeeping, that you can go on learning things year after year. Even the musings of deep February are a fresh adventure. There is indeed a time for everything. □

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Book Review

You Can Can With Honey By Nancy Cosper, c/o Rainhouse, 2270 N.W. Irving, Portland, Oregon 97210. Twenty-one pages, soft cover. Price \$2.00. A unique book with recipes using honey for canning fruit, jams, preserves, pickles, chili sauce, chutney, and more. It provides the "how-to" for canning with honey, including how to thicken honey jams so they don't turn out like syrup. The simple, easy to follow directions will be appreciated by anyone who is inexperienced in the art of canning. Don't overlook this as an excellent gift book to encourage the use of honey in the diet in place of sugar.

Bee Venom Therapy (Reprint) — L. A. Doyle, D.O., has had the book. *Bee*

Venom Therapy by Dr. Bodog F. Beck reprinted after acquiring publication rights in November of 1981. A limited number of copies were reprinted by Graphic Publishing Company, 204 N. 2nd Ave. W., Lake Mills, Iowa 50450. The book is available from Graphic Publishing for \$36.60, postage included in the charge.

Mr. Charles Mraz of Middlebury, Vermont penned a long commentary on bee venom therapy at the front of the reprinted edition of *Bee Venom Therapy*. Mr. Mraz is extremely knowledgeable in using live bees in the treatment of arthritis.

Beeswax by Ron Brown. Bee Books New and Old. Tapping Wall Farm, Burrowbridge, Somerset TA7 0RY, England. Seventy-four pages. 1981. (6.75 pounds English.)

There have been remarkably few books, or even articles, on beeswax. The last book was that of the same title written by Huber H. Root just thirty years ago. I say this is remarkable because beeswax has played such an important role in our history. In

regions of East Africa, for example, there are some tribes specialized in beekeeping and collecting wax for thousands of years; beeswax, along with the plant resins frankincense and myrrh, were exported from this area in great quantity. Beeswax is a stable commodity that can be transported and stored with ease.

Ron Brown points out that beeswax has played an important role in Christianity since the fourth century or earlier. The Catholic Church has always insisted that altar candles contain at least some beeswax. In England the Worshipful Company of Wax Chandlers has been active for over 500 years and was officially chartered by the King in 1484. For many years, says Brown, they had a "virtual monopoly of artificial light," much as an electric company might have today.

This book has chapters on: Beeswax and History, The Origin of Beeswax, Wax Production at Home, The Uses of Beeswax, Candlemaking, Beeswax for Honey Show, and Making Wax Foundation and Care of Combs. These are followed by a

COMING!

Here are just some of the exciting articles you may look forward to in the coming issues

May:

- Pollen Trapping Problems**, by Karel Rehka. "I designed a very simple and very inexpensive device."
- Honey Bee Brood Diseases**, by Grant Morse. "I am writing this with the beginner chiefly in mind."
- Photography In Beekeeping**, by Bernie Hayes. "My favorite handy camera is the Eastman Kodak Instamatic X-15F."

Beginning in Photography or How to Make a Honeybee Say Cheese, By Steven B. Banbara. "My recommendation for honeybee and beekeeping photography would be to use the single lens reflex model."

June:

- A Chinese Way With Bees**, by Kevin Kelly. "We came to visit the apiaries of Mr. Ho Fa Hsing, an animated, open faced man about forty, with a shock of thick, long hair."
- Solar Beekeeping**, by Merritt Taylor. "Profitable beekeeping is coming more and more to closed bottom entrances for winter."
- Chinese Tallow Trees**, by Doug Buffington. "Although the crop may vary, the tallow will never fail, yielding an average of about 100 pounds of honey per colony."

July:

- Are We Raising a Lot of Welfare Bees?**, Ancel Goolsbey. "I think you will be pleasantly surprised at the amount of surplus honey this hive management system will reward you with."
- Bee Yard Menace**, by Patricia Yunkes. "Something had been killing and probably eating bees all summer."

— AND MUCH MORE —

technical appendix that reviews some of the chemistry of beeswax, how to detect adulteration, and the use of beeswax in cosmetics and other products. The text is easy to follow and is illustrated in a practical manner.

Roger A. Morse, Dept. of Entomology, Cornell University, Ithaca, NY 14850.

Honey Bee Pathology by Leslie Bailey. 1981. Academic Press, Inc. (London) LTD. 24-28 Oval Road, London. NW1 7DX, England. One hundred six pages plus references and index, hard cover. Price: \$19.50.

This book contains some of the most recent knowledge on honeybee diseases, including diseases and pathogens that are now of particular worldwide importance. Beginning with a brief introduction to beekeeping and the life cycle of the honeybee, there are chapters on viruses, bacteria, fungi, protozoa, parasitic mites, insect and nematode parasites, disorders of uncertain origin and non-infectious diseases, and the treatment of bee diseases.

Of special interest is the descrip-

tion of how each disease is transmitted within the colony and the relationship of the level of infection to other elements such as the life cycle of the bees or seasonal changes.

In conclusion, the author emphasizes that it is usually our beekeeping practices that disrupt the delicate balance between the honeybee colony and its pathogens and allow the spread of infectious disease to the point of loss of the colony. It has rarely been acknowledged so pointedly that it is our own interference with the "natural" life of the honeybee that causes many of these disease problems.

Although this book will appeal directly to those individuals who are involved with the honeybee on a scientific level, the text is written in a manner that will not confuse those with some prior knowledge of bee biology who wish to increase their understanding of bee diseases. It is not, however, a book for the average hobbyist beekeeper.

Cynthia Manuel



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Thank you, Ken Riley

Salt Of The Earth

By THE OLD TIMER

I HAPPENED TO be visiting an old friend of ours, Edward (Ed) McClatchy, last weekend. He has what he calls a hobby farm; fifteen acres, mostly grass, a few fruit trees, a horse, two cows, two calves, a goat, some chickens, a dog, two cats, and recently, five colonies of honeybees. One of the reasons for my being there at this time was that I had acquired a fairly good second extractor, minus the spigot, years ago and thought that now it could be made good use of along with a number of extra supers and what-not accumulated through time. We were having coffee with Martha's (Ed's missus) whole wheat scones and honey and yearning about the old days (this requirement calls for a certain age group — more like an over the hill club) when a neighbor, Frank Hayworth, another old crony dropped in to pick up a calf he had spoken for. However, he must first join us in sampling Martha's delectables, so it was back to the cof-

endless growth, this wonderful renewable resource the woods provided. Thus, in order to keep from being overrun, as it were, by the forest, we seemed (when time permitted) perennially occupied. Brushing, chopping out the myriad seedlings which popped up miraculously year long, along with our land clearing harvest, resulted in piles of firewood stacked all over, and of course thousands of cedar and pine fence rails. As early as I can remember, after the commodious woodshed was filled to overflowing, all surplus loads were simply tossed onto a great twenty foot high pyramid between the house and barn. For many, many years it never seemed to get any smaller no matter how indiscriminately it was used. Firewood sold in town for \$4.00 a cord (with extra blocks thrown in for good measure). It was the very best bird's-eye maple, split. Those were the days when milk was 7¢ a quart, delivered to your door in glass bottles. Eggs were 4¢ a dozen and we received 6¢ a pound for butter.

hadn't a job by that age. Welfare was unknown. With us fellows up at Pine Pass, Bear Lake and the Barrett settlements, it was a very unique and frustrating experience. Our book learning fought a losing battle with chores, snow blocked roads much of the winter, haying and harvesting in summer and the school marm absent for one reason or another. With this hit and miss arrangement is it any wonder then that to a man we wound up mainly self educated. One good thing though, which made for less baffling living in those days, there were no bureaucrats around to tell you what you could or could not do. A man did what he had to and sometimes took the consequences. There was a doctor in town who doubled as a cabinet-maker. Apparently there was more money to be had with the latter occupation for there was very little sickness. Perhaps the lesson to be learned here is, **eat more honey for health**, for that's all the sweetener we had. There was no sugar then, and, in any case,

"Every once in a while you come across an animal which is something special."

fee and reminiscing. Commenting on the awful price of gasoline we began comparing life and times now to what it used to be, and came to the conclusion that any of us who were fortunate enough to be around in "the good old days" didn't know how well off we were. I remember a conversation with Mother. Afterwards, looking directly at me, my father remarked, (and the implication drifted over my head at the time) "It seems like young-uns today may be getting the best of two worlds, barring wars. They are living in a short period of civilized saneness between the end of the past with its trials and tribulations, and the beginning of the future before the world becomes too corrupt, which it will, for this is more and more evident in town every time we go." Greed is an awful thing. In retrospect, how right he was.

Speaking of town, we would never travel that far, roughly sixty miles of corduroy, dirt, and gravel, unless absolutely necessary. It cost nothing in the way of money in those early horse and wagon days with a full load of stuff to sell or trade. The main portion of this, perhaps twice yearly, cargo was invariably firewood. Living in a wooded country such as this, we could never keep ahead of the

Back then it was considered most unnecessary for children to continue on at school past their thirteenth birthday (hereabouts anyway). In fact, a boy wasn't thought much of if he

who could afford to buy it? Even the occasional malady would in most cases go unreported, considering such a thing degrading. Accidents, yes, from time to time. Even then peo-



A reader wrote in to *Gleanings* to ask if there really is an "Old Timer". Yes, there is really is such a person. Here the "Old Timer" checks one of his colonies of bees.

ple were reluctant to consult old Doc Peters. They preferred to "weather it out," knowing that, unlike man-made machines, the wonderful living body, if well nourished, would sooner or later repair itself, if the least possible.

Take for instance the time a young friend of mine was struck by a "widow maker," a dead tree limb breaking off without warning as one works below. In this case, although the main branch missed us, a sharp stick pierc-

ed his face, smashing several teeth and causing an awful looking wound. Needless to say, he was in terrible agony for a while. It was suggested he be taken to town for the doctor's advice. However, after applying a liberal quantity of comb honey, warm, right out of the brood chamber and held in place by thick cloths, he felt considerably better next morning. This was not surprising since we put great store in the curative powers of honey, so much so that he refused medical attention. To this day, Ed Mc-

Clatchy, yes, my very same partner of long ago, now sitting across the table from me, is bothered not at all by those missing teeth and a king-size pucker.

As I said earlier, no one, to my knowledge, used sugar in those days. We literally wallowed in honey. As the land was cleared, great stands of fireweed, or willow herb appeared, affording tremendous crops of both honey and wax. In my opinion, there's nothing to equal this plant for its astonishing abundance of nectar. You'd laugh if you could see some of those early "hives." No two were alike. There were, of course, skep baskets of all shapes and sizes and material; wood and straw being the most common. There were small hollow logs, square plank boxes, milk cans, barrels, and tea chests. There was nothing standard or modern until someone found an A. I. Root hive in town. Log fences were popular for keeping out bears; some even hung skeps high in trees. Almost everyone had at least one or two colonies. For several years one old pioneer kept two hives in his chicken house for warmth in the winter. They did exceptionally well I might add. Just for the record, there were no Italian bees and foulbrood was unknown. Bee trees were fairly common in our woods and knowing this we always kept our eyes open for them. Once we took over six hundred pounds from one big tree, filling copper "boilers," wash tubs, milk cans and pails. Another time we found a hollow cedar toppled by a storm lying beneath a cut-bank which contained but a handful of dead bees and about a hundred pounds of honey. Now, although it had lain for several years, there was no wax moth. It is strange that although the honeybee flourishes there, the moth cannot.

Our road to town, to which the authorities had contributed nothing, was built entirely by pioneers who settled along its length, so it follows that any maintenance fell on the shoulders of those who used it. This duty was administered by chosen patriarchs or elders of each settlement who saw that those who could did the upkeep. Five or six of us were always detailed in the early spring, after most of the frost had gone, to patrol the stretch (about 25 miles) to the Barrett settlement with any "loners" in between helping out if

(Continued on page 216)



Penny



For the "Old Timer" honeybees are an important part of the order of things.



Who's Who in Apiculture

To supply a handy reference of the names and addresses of state and provincial apiary inspectors, secretaries of beekeepers' associations, extension workers in beekeeping, and other information often needed by our readers, we have corrected our Who's Who in Apiculture as of March 1, 1982



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Address

Ala.	Not Allowed	Yes	Yes	Mrs. R.V. Harrell, Hayneville 36040
Alaska	None	No		Cook Inlet Beekeepers Assoc., P.O. Box 8-173, Anchorage 99508
Alta.*	Not Allowed	Yes	No	Louise Zwaenepoel, 5908 137th Ave., Edmonton T5A 1C9
Ariz.	Cer. & Per.	Yes	No	Clarence L. Benson, Box 858, Oracle 85623
Ark.	Cer. & Per.	Yes	No	Joe M. Parkhill, Rt. 2, Box 190, Berryville 72616
B.C.*	Not Allowed	Yes	No	A. King, 638-1701 Cedar Hill Cross Rd., Victoria V8P 2P9
Calif.*	Certificate	Yes	No	Frank Johnson, 2114 Westminster Dr., Riverside 92506
Colo.*	Cer. & Per.	Yes	Yes	Mrs. Tom Jones, 605 No. Columbus, Yuma 80559
Conn.*	Certificate	Yes	Yes	Fred Hartman, 46 Climax Rd., Simsbury 06070
Del.*	Cer. & Per.	Yes	No	John Landon, 747 Union St. Ext., Milton 19968
Fla.*	Cer. & Per.	No	No	James C. Mashburn, 2412 Tupelo Terrace, Tallahassee 32303
Ga.*	Cer. & Per.	Yes	No	Cecil T. Sheppard, 3204 West Mart Lane, Doraville, 30340
Hawaii*	Not Allowed	No	No	Lee Ong Chun, 2115 N. School St., Honolulu 96819
Idaho*	Certificate	Yes	Yes	Debbie Millet, Rt. 1 Box 8 Bee, Marsing 83639
Ills.*	Cer. & Per.	Yes	No	Hoyt Taylor, Rt. 2, Pleasant Plains 62677
Ind.*	Cer. & Per.	Yes	No	Claude F. Wade, Room 613, State Office Bldg., Indianapolis 46204
Iowa*	Cer. & Per.	Yes	No	Glen L. Stanley, Agric. Dept., Wallace Bldg., Des Moines 50319
Kans.*	Cer. & Per.	Opt.	Yes	Duane Levin, Box 5, Stuttgart 67670-0005
Ky.*	Cer. & Per.	Yes	Yes	Allen Holt, Rt. 2, Box 314, Frankfort 40601
La.	Not Allowed	Yes	No	James Barnard, Breaux Bridge, La. 70517
Man.*	Not Allowed	Yes	No	Don Dixon, 910 Norguay Bldg., Winnipeg R3C 0P8
Me.*	Certificate	Yes	Yes	Philip W. Teague, Box 1621, Rockland 04841
Md.*	Permit	Yes	No	John Romanik, 3200 Pine Orchard Lane, Ellicott City 21043
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Mich.*	Not Allowed	Yes	No	Sharon Kussmaul, 12447 Mathews Hwy., Clinton 49236
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Miss.*	Cer. & Per.	No	Yes	Harry R. Fulton, P.O. Box 5207, State College 39762
Mo*	Cer. & Per.	No	No	Marilyn Kay Smith, 4301 Walnut Tree, St. Charles 63301
Mont.*	Cer. & Per.	Yes	Yes	JoAnne Speelman, 210 Harmony Rd., Kalispell 59901
Nebr.*	Cer. & Per.	Yes	No	Jim Olingie, Loop City 68853
Nev.	Permit	Yes	Yes	Mrs. Alma Nygren, 1225 Lovelock Hwy., Fallon 89406
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N.Y.*	Certificate	Yes	No	Jon MacDonald, Paris Hill Road, Sauquoit 13456
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N.D.	Cer. & Per.	Yes	Yes	Dewey Robson, 338 Joal Dr., Carrington 58421
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Que.*	Not Allowed	No	No	L. Dion, C.P., 656 St. Hyacinthe, Que.
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S.D.*	Certificate	Yes	Yes	Gary Schmidt, Star Rt. 2, Box 6, Martin 57551
Tenn.*	Cer. & Per.	Yes	No	Howard Kerr, Rt. 11, Box 7 Big Springs Rd., Maryville 37801
Texas*	Cer. & Per.	Yes	No	Melinda Fuess, 443 Hughs, Irving 75061
Utah	Certificate	Yes	Yes	David S. Miller, Box 15807, Salt Lake City, 84115
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Va.	Cer. & Per.	No		Mrs. Grace Bowman, Rt. 2 Box 57, Victoria 23974
Wash.*	Certificate	Yes	No	Dick Hunger, 1462 Peterson Rd. Burlington, WA 98233
W. Va.*	Cer. & Per.	Yes	No	Mrs. Sarah Hutchinson, Webster Springs 26288
Wisc.*	Cer. & Per.	No		Charles Kopf, Rt. 2, Box 225, Loganville 54943
Wyo.*	Certificate	Yes	No	Mrs. Robert Bryant, 901 Obie Sue, Worland 82401

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Alaska	Wayne Vondre, Anchorage		None
Alta.			Don MacDonald, Falher T0H 1M0
Ariz.	Dr. Norbert Kauffeld, Tucson		R. W. Hancock, Phoenix 85005
Ark.			Donald E. Bailey, Little Rock 72205
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Conn.	Prof. Alfonse Avitabile, Waterbury		Allen Poole, New Haven 06504
Del.	Dr. Charles E. Mason, Newark	Dr. Dewey Caron, Newark	Phillip M. Bowman, Jr., Dover 19901
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Ga.	Dr. Alfred Dietz, Athens	Rodney Coleman, Athens	James P. Harron, Atlanta 30334
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NORTHEASTERN REGION — Dr. H. Shimanuki, Laboratory Chief, Bioenvironmental Bee Laboratory, Rm. 200, Bldg. 476, BARC — East, Beltsville, MD 20705.

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NOTE: Where we did not hear from a state or organization we repeated last year's listing.

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APIMONDIA — International Federation of Beekeepers' Associations — Italy, Rome, Corso Vittorio Emanuele 101. President, Prof. Eng. V. Harnaj (Romania); General Secretary, Dr. S. Cannamela (Italy). Periodicals: *Apicata* (quarterly); *Agrindex* (monthly). (Write for our catalogue of publications on beekeeping and allied subjects.)

Alaska's First Beekeepers' Teleconference

"Alaska has its share of voluble beekeepers. . . ."

By DAVE TOZIER
Fairbanks, Alaska

"WHO SAYS there is no Santa Claus?" was only one of hundreds of comments made by participating beekeepers representing Alaska's four major honey producing areas during the Dec. 15, 1981 statewide teleconference. An exciting event for Alaskan beekeepers, the three-hour-long exchange of ideas and information was the first of a tentatively scheduled quarterly discussion to be held via the University of Alaska (UA) teleconference network, according to moderator Wayne Vandre.

"Follow-up reports from participants have been enthusiastic and indicate full support for future exchanges," Vandre said several days after the conference. "I'll be working with the (UA teleconference) network to set up a quarterly schedule on a trial basis."

As honeybees need pollen and nectar to survive, so do their keepers need exchange of ideas and information. In the thousand-plus miles between southeastern port cities warmed by the Japan current and tiny settlements in the foothills of the Brooks Range north of the Arctic Circle, Alaska's beekeepers face extremely varied climatic conditions. From the forested hills surrounding Eagle, on the Yukon River near the Canadian border, west to the muskeg and tundra lowlands where Bethel and Kotzebue look towards the Bering Sea, flora and terrain vary from regal to ridiculous. Here, as everywhere, microclimates also have to be reckoned with. Not too surprising, a management technique practiced by a Ft. Yukon beekeeper during that Interior area's short but intense summers may be adaptable to a 600-mile-distant Kodiak apiary when (if?) that large island's summer rains and winds abate. But how to get that information from point to point?

Many communities aren't connected by Alaska's truncated highway system. Besides, a road isn't necessarily the solution: It may be a 300-mile round trip to the next town,

with no guarantee of a resident beekeeper. Letters, though commonly used, are a poor substitute for verbal communication. Short of personal contact a telephone call is great, and most towns have a phone system. Some Alaskan beekeepers use phones extensively but high monthly toll charges discourage general practice. These thoughts and others probably crossed Vandre's mind before he struck pay dirt in the teleconference brainstorm.

Vandre, horticulturist with the Anchorage District Office of the University of Alaska/U.S. Department of Agriculture Cooperative Extension Service, is well suited to moderate the proposed educational forums. He's an experienced beekeeper — "I got my first hive in 1965," Vandre said — and, because of time limitations, now runs only six colonies. Before he came to Alaska several years ago, he put in a three-year stint as Extension Service agent with the University of Wisconsin, Madison, where he became aware of the potential of statewide teleconferences. Prior to that, Vandre worked three years at the U.S. Department of Agriculture Bee Research Lab, also at Madison.

"Why the teleconference?" Vandre repeated my question. "Well, it fits into my job of working with the public...and I'm a beekeeper, remember. Then the University of Wisconsin worked with the UA helping to set up our (teleconference) network and, as you probably know, Wisconsin holds annual beekeeping classes over their telecon (I didn't know). I guess the rest of it just fell into place."

More like rising into orbit. Word of the conference began spreading from Extension Offices, the state's three beekeeping associations and personal contact a month before the scheduled date. At least one radio station also publicized the event.

Early reports indicated that a dozen cities and towns would be on the horn but last minute gremlins apparently interfered and only five communities responded: Anchorage,

Bethel, Delta Junction, Fairbanks and Soldotna. What lack there may have been in quantity was offset by enthusiasm of the conferees.

Alaska has its share of voluble beekeepers and three hours didn't seem too long a time in which to get acquainted and discuss important issues. Vandre's agenda of four main topics and suggested time limits worked out well: desired legislation; disease status and control; educational activities towards beekeepers and the public, and an open subject period.

Disease and legislation were prime subjects, probably because we're now working with both. Beekeepers statewide know that Alaska no longer is — if ever it was — free from brood disease. Fairbanks had instances of both American and European brood disease (AFB and EFB); Anchorage has found only AFB to date, and Soldotna reported chalkbrood. Diagnosis returns from Beltsville substantiated local identifications. Quick action by some and full cooperation by all beekeepers involved eliminated known cases. The guard is mounted. So Alaska joins the ranks of beekeepers throughout North America in becoming disease conscious.

Concerning legislation, talk was mostly about important changes to be made in a bill that passed the State House of Representatives in the first half of the current legislative session. This "Bees Bill," another Alaska first, will prohibit the importation of used beekeeping equipment and of honeybees on frames (nucs). It will also spell out measures to be taken for disease control. Beekeepers around the state joined forces in support of the bill and are pleased with its passage, but the wording needs clarification and some additions.

State Representative Hugh Malone, who introduced the original bill, attended the conference, as did Senator Donald Gilman and a

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Salt Of The Earth

(Continued from page 211)

possible. We were unpaid of course, but we considered it one of the highlights of the year to roam gypsy-like under hot spring sunshine, wagon piled high with oats and hay for the horses, food for us, and implements. We were prepared for anything en route, road repairs, ditch digging, building culverts, bridging and brushing. The first two nights, as I recall, we returned home, but after that we had usually progressed beyond a certain point, Lone Butte. From then on we camped out. I should like to recall one spring in particular and a typical work-load. We had almost reached the halfway point when we met up with a crew of four from the Barrett Settlement preparing to build a small bridge. Naturally we threw in our lot with them in order to finish up. The two older men designed its construction, drawing diagrams in the dusty roadway, while the rest of us, using horses, swamped out logs. With all in readiness everyone fell to it with gusto and in a few days, voila, a thing of beauty painstakingly fitted to last a lifetime or more. It stands today as it did then and I slow reverently each time I cross, listening to the hollow ring of space beneath me and the ceaseless rush of water; remembering. Those were the days of "all for one and one for all." Ours was a simple, rugged life, but we were happy. It goes without saying that our spring road undertaking, although very necessary, had to be completed as quickly as possible (usually about two weeks) because of mounting seasonal chores at home. At the end of a long day's wayfaring, after supper and around the fire, a guitar and harmonica ringing through the twilight hush would induce some to sing and yodel, others just to relax and daydream. Horses wandered at will, but hobbled so they wouldn't go far. There were warm, star-studded nights, the haunting call of a loon; a moose thrashing around in the balsam swamp, unseen in misty pre-dawn wreaths. Beavers, systematically changing but improving the habitat for all life, not just their immediate vicinity, but having a rippling effect beneficial for hundreds of miles. There were the ever present ravens, and over it all, the quiet. Sometimes we worked waist deep in water, out of sheer bravado, struggling with logs and rocks to build a culvert or drain a jam. But we were young and strong and alive. Nostalgically, all this is our past, and gone forever, for the days of our youth have flown away and except in memory, will not come back.

Thanking Martha for a most delicious repast, we got up, sauntered out into bright morning sunshine and made our way over to a paddock adjoining the barn. Knee high grass heavily sprinkled with tall yellow buttercups filled the little enclosure. Tall grass almost buried two beautiful Jersey calves as, head down, they munched contentedly. However, at the sound of Ed's "Take your pick, Frank, that one's Penny — the other's Candy," the two cream colored, fawn-like animals came bounding toward their master. Opening the gate, Frank picked up the nearest of the pair and with it nestled in his arms, walked over to his truck. I got in on the side and Frank handed me the calf then walked round to the driver's side. It was then I detected the first signs of alarm in the little creature as she began to struggle. Only two weeks old yet some sense, sixth or otherwise, told her something was wrong. Already she missed her companion. She settled down however, and away we went. Ed followed in his pickup. Now Frank's place is about two miles as the crow flies, but more like four, going round by the county road. Nevertheless, in a few minutes we pulled into Frank's barnyard where we got out and set the little calf down, guiding her gently over to a small paddock. We turned back as Frank's wife, Jean, appeared with a new leather collar and it was while we were thus engaged that Penny, the little calf, made her move. Quick as a flash she somehow struggled through a rail fence and with legs going like pistons streaked across the orchard, plunging through a barbed wire fence and out into an open field. All this in seconds, while we watched in shocked consternation. Leaving Jean wringing her hands in anguish, the three of us tore after the little animal, Ed calling, but

in vain. About 200 yards away little Penny flung herself into the creek and was carried down ways to a bend where she staggered out on the far shore. Without a pause, she scrambled up a steep bank, then disappeared from sight. At this point Ed said, "Look Frank, you go back for the truck and circle round on the road, while John and I try to keep her in sight." As Frank swung around we headed upstream to a small bridge which we crossed; but by now the little calf was just a running dot in the distance and moments later vanished altogether. On and on we went at a fast walk until finally Ed's buildings came in sight. Little Penny was nowhere to be seen. Fifteen minutes later we clambered wearily through the last fence to be greeted by Frank and Martha who pointed. With a lump in my throat I saw the tiny animal panting, wet, disheveled, with a bloody scratch showing on her right leg, but standing quietly beside her friend. Ed stepped into the paddock stretching out a hand and both Jerseys came without hesitation. Without looking around he said, "Sorry Frank, after what this little one has just gone through to get home neither one will ever leave this farm, or me, the rest of their lives. I'll not betray their trust again." Even Frank had a catch in his voice as he replied, "Yep, I guessed as much a few minutes after she took off. She belongs here you know. Here's the collar we bought for her. I'd sure be obliged if you'd keep it for Penny. I'll get another to match for Candy."

Frank and Ed, along with others of their kind, salt of the earth, a rough exterior covering a heart of pure gold. In a vicious world, isn't it nice to know that here and there exists pockets of wholesome humanity who still practice **integrity, consideration, and love.** □

Alaska's First Beekeepers' Teleconference

(Continued from page 215)

delegate from Senator Don Bennett's office (Bennett was in Washington). They all thought the agreed-upon reworked bill would have no opposition in the senate or upon its return to the house.

Another telecon participant was Kay Lasley, editor-in-chief of the monthly *Alaska Farm Magazine*. She made the generous offer of a full page in each issue to be devoted to beekeeping news and activities. Lasley made one stipulation: Beekeepers will have

to furnish the copy consistently and on time. The promised space was not reserved forever, of course, but the implication was that the offer will stand as long as interesting copy meets deadlines. This page will be in addition to occasional apicultural feature articles of general reader interest.

"Think of it as a three-pronged educational effort," Lasley suggested. "You can tell the general public about beekeeping; legislators (all get complimentary copies) can

(Continued on page 226)



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Honey Report

(Continued from page 194)

tive gathering pollen and brood rear-
ing. Much feeding. Honey sales
holding up well in Kentucky.

Region 7

Most bees with ample honey stores
reported from Texas and pollen in
good supply in most areas. Citrus
blossoms look promising in Texas.
Not much honey being offered for
sale. Warm weather and bees active
in Arkansas in early March. Bees in
southern part of Arkansas in fine
shape. Honey sales at retail are slow.
Bees in good condition in Oklahoma,
little winter loss. Plenty moisture.

Region 8

Warm spells with temperatures in
the 70's have given bees good flights
in Colorado. Bee populations are nor-
mal and honey stores are adequate.
Moisture conditions near normal in
most areas of Colorado. Retail honey
sales have been good and some
packers are sending out inquiries for
honey.

Region 9

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Strictly Backlot

By CARL CALLENBACH
135 College Avenue
Elizabethtown, PA 17022

ABOUT TWO WEEKS ago, with the contest entries for the "Third Annual How I Heroically Caught a Swarm Contest" and intrepidation in hand, I approached the panel of judges seated majestically beneath the "Steamed Clams, \$3.00 Per Dozen Every Thursday Nite" sign in the dark far corner of the Colebrook Tavern. I carefully explained my mission, the deliverance of eleven contest entries that had somehow passed an initial screening. "It is your task," I informed them, "to once again diligently select the winner." I thanked them for the wisdom they had expended in two previous contests, and I told them I was sure they would apply even greater resolute dedication this time, if that were indeed possible.

To which they replied: "What did you think of the Phillies' trading Lonnie Smith to the St. Louis Cardinals?"

I attempted to focus their musings on the import of the contest. "Gentlemen," I said. "You'll remember that the winner of the 'Third Annual How I Heroically Caught a Swarm Contest' will receive a small can of baby talcum powder, a prize excelling the significance of the contest by about two dollars."

Their comment: "And then the Phillies trade Keith Moreland and Larry Bowa to the Cubs! And McBride to the Cleveland Indians. Is there no end to the foolishness being perpetrated in Philadelphia?"

I again tried to interrupt the ruminations of my favorite Philly fans, but to no avail. "We are no longer rooting for the Phillies," they announced, "and we have become Kansas City Royals devotees. And we are enjoying the fresh air! Surely nothing untoward ever happens to Kansas."

Which may or may not help explain why two days later the panel declared Mark Sodamann of St. George, Kansas, winner of the "Third Annual How I Heroically Caught a Swarm Contest."

His entry:

As a backlander living in the state of Kansas, I have the great opportunity of practicing the art of swarmcatching. I prefer to view this as a risk of life and limb to save a group of bees that are stranded in the top of a tree

and can't get down.

As all readers of *Gleanings* know, Kansas is in the dead center of the United States. This is very fortunate for me. A swarm going on vacation, leaving home from the north, south, east or west, has to cross Kansas. Kansas country is so flat and wide open a beekeeper can see a swarm coming for miles. On a clear day bees can be seen coming for days before they decide to get stranded in the top of a tree and be saved. Actually, this is great. Kansas beekeepers have time to prepare for the rescue of the swarm.

With this history behind, I shall get to the event that I remember so well, when I saved a bunch of helpless little bees last spring. It was either late June or early July, or was it early June or late July. I have trouble remembering. I have saved over eight million swarms and this is just one true story you are about to read. Oh yes, I remember now, it was June 15, 1980, at 3:02 in the afternoon. I was sitting in my backyard on this still summer day when I heard a roar coming from somewhere out west, but I couldn't see anything. I heard what I believed to be a beekeeper yell, "There goes another ###*#! swarm." I knew then I better get ready.

One hour later I saw what looked like a cloud moving my direction making a terrible roaring sound. I knew the cloud was either Dorothy returning from Oz or a swarm of bees. I ran in and called Dorothy's mother and Dorothy was at home so I knew then it was a swarm of bees about to get stranded in the top of one of my trees. I would have to be ready to save them.

Running back outside, I estimated they were over Utah following Interstate 70 straight for me. I ran back into the house and called all the neighbors to let them know the bees were coming. None of the neighbors like my bees for some strange reason. I never have been able to figure that one out.

Going back outside, I could see the neighbors boarding up their windows and locking all the doors. I realized if the bees were going to be rescued from the top of a tree, I was going to have to do it by myself.

Supers ready, ladder found, and

saw in hand, I was ready for anything. Taking a deep breath, I went out and sat under the tree I felt they would get stranded in. This just happened to be the only tree in the state of Kansas, at least this is what the old timers tell me. The next step was just to wait.

To help speed things along, I won't go into detail on what happened the next three days and nights sitting under that tree waiting. I will say that after three days and nights the swarm did finally come and get stranded in the tree I figured them to.

I have the same trouble most beekeepers have. When a swarm arrives, I never have enough empty supers to handle such a large swarm. This swarm was so big when it finally settled in that big old cottonwood 100 feet in the air, the tree started to sink into the ground. I knew then if the swarm was to be rescued, I had to act fast. The only thing big enough to hold the swarm was our camper. I quickly drove it to the tree, jumped out and opened the back door just as the bees were beginning to sink into the ground with the tree.

Well, luck was with me. My wife had left a jar of honey on the table, and the bees were hungry. They went right in and started chowing down.

Everyone said that I was a hero after saving that swarm. The local farmers thought it was a swarm of grasshoppers coming to eat their crops, and they thought I saved their crops single-handedly. The neighbors felt that they could once again come outside of their homes without fear for their lives. The tree without all that excess weight sprang back up and provided shade for the bees in the camper. However, now my wife and I can't use our camper anymore because the bees decided to take it south for the winter.

Swarm catcher Sodamann adds: I know this true story won't have a chance at winning the talcum powder because most beekeepers are liars at heart and will make their stories a little far-fetched just to win the grand prize. I would like to know if I send you the price of a can of talcum and money to cover postage, if you would mail me a can so that I can lie with the rest of my beekeeping friends and

(Continued on page 234)

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Notes From The Straw Skep

By BESS CLARKE
50 Lycoming Street
Canton, PA. 17724



LAST MONTH I wrote about a pair of churches who got together and built a new parsonage for their minister. Now I want to give you the sequel to that story. The pastor who inspired the venture into faith is gentle, soft spoken Mercy Kasambira, the minister of the East Canton-Windfall Charge of the United Methodist Church.

Mercy was born in Zimbabwe (Rhodesia) 48 years ago, one of 11 children. She met her future husband, Dan Kasambira, when she attended a mission school where he was a teacher. Some years later, after they married, Dan changed careers and became a social worker at the Christian Center at Umtali.

Since that time the British colony of Rhodesia has gained independence (in 1980) and a new name — Zimbabwe. The population is made up of seven million natives and 220,000 white settlers. Although they are permanent residents of the United States the Kasambiras have maintained their citizenship in Zimbabwe and are in touch with friends and relatives.

Dan's father was a Methodist minister for 32 years. He served 17 churches in a 70 mile radius of his home, traveling by bicycle to visit each of the congregations in the mountainous subtropical country. His doctor said, after he retired, that his body was literally worn out.

Dan came to the United States for the first time as a member of a quartet sent by the Zimbabwe annual conference on a goodwill tour to express gratitude for support.

At the end of the tour, when the others returned home, Dan stayed in Augusta, Georgia where he began studies at Paine College, a school sponsored by the United Methodist Church.

Mercy and the couple's two young children joined him in 1961. After two years Dan transferred to Illinois Wesleyan, another Methodist related institution. Mercy attended high school at Normal University High

School there. The family's next move was to the University of Michigan where Mercy was graduated with honors from Ann Arbor High School.

They went back to Zimbabwe in 1966. Dan resumed his work at the Christian Center and Mercy did extension work with rural women.

They had been sponsored by the church's Board of Missions during their first stay in the United States, but when they returned in 1970 for further education they came on their own initiative. Mercy recalls that it was a difficult time for them financially. They ran out of money in Harrisburg, PA. Dan went on by himself to Cleveland where he had enrolled at Case Western University. He borrowed enough money from a Methodist pastor there to enable his family to join him. The Kasambiras earned their way over the next years through donations from speaking engagements, odd jobs such as yard work, and contributions from church people. Mercy remembers gratefully that the church janitor gave them an old car so they could travel to work and school.

While Dan worked on his doctorate, Mercy began undergraduate work at Cuyahoga College. Three years later, when Dan was hired to teach at Mansfield State College, she transferred there. She earned a B.A. degree in Sociology in 1976 and a B.S. in Home Economics a year later.

Next, Mercy matriculated at Lancaster Theological Seminary, aided financially by a friend in Erie, PA. Following her graduation in May 1980 she was ordained by the Central Pennsylvania Conference of the United Methodist Church.

During the years of her schooling Mercy took time to bear two more children: Daniel, 14, and Emily, 10, are in school. The older children are Edward, 24, a student at Mansfield State College; and Marcia, 26, an M.S.C. graduate, who lives in Texas with her husband, Roger Emerson, and the Kasambira's first grandchild, Jeremiah.

The family has been living in East Canton, PA since July 1980 when Mercy accepted her first pastoral appointment. Dan commutes to his teaching position at Mansfield State College. They have recently moved into the new parsonage built for them by their congregations.

The Kasambiras have underwritten the education of four more couples from Zimbabwe. Two of those couples have already returned to their homeland to work.

Mercy wants everyone to know that she and her family have been well received in this rural community in northern Pennsylvania. That fact is obvious. The new parsonage is a visible sign, and so is the enthusiasm of her congregations. Surely the Lord is working through Mercy Kasambira.

Recipe

My niece made a special sweet roll to celebrate my birthday and I want to share it with you. She got the recipe in a home economics class at her junior high school.

Betsy's Lemon Cheese Braid:

- 1 loaf frozen bread dough
- 1 package (8 ozs.) cream cheese
- 1 egg yolk
- 2 tablespoons honey
- ½ teaspoon vanilla
- 1 teaspoon grated lemon rind
- 1 egg

Allow dough to thaw overnight in the refrigerator and then let it stand at room temperature for one hour. Set on a lightly floured surface and roll and stretch to an 8 x 16 rectangle. Let rest while making the filling. Soften cream cheese and beat with egg yolk, honey, and vanilla in a small bowl. Stir in lemon rind. Place dough on a long cookie sheet. Spread filling down the center third of the dough. Cut edges of dough from outside to filling at one inch intervals and overlap strips from left to right to make a braid across the top of the filling. Beat egg with a teaspoon of water, and brush over braid. Let stand in warm place until it rises — about an hour. Bake for 30 minutes at 350°F. Serve warm. □

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Sequential Toxicity Tests For The Honey Bee

By CARL JOHANSEN
Department of Entomology
Washington State University
Pullman, WA 99164

A PANEL OF experts was convened in Washington, DC in November 1978 to prepare a set of test protocols for determining the toxic hazards of pesticides to the honeybee. Environmental Protection Agency personnel have included much of the methodology developed in their "Guidelines for Registering Pesticides in the United States." Following are brief descriptions of the test methods with added units on potential hazard of pollen contamination under field conditions.

Honeybee Acute Contact LD₅₀

Most investigators would agree that almost any spray tower, topical drop or other method of determining the inherent contact toxicity of pesticide chemicals to honeybees would suffice for this protocol. The conferees chose to adopt the vacuum bell-jar dusting technique of Laurence Atkins and co-workers because of the backlog of data on hundreds of pesticides already determined by the developers of the system.

Worker honeybees of uniform age are obtained from colonies at the start of each test. These are aspirated into treatment cages made from 14-mesh/inch (5.6 mesh/cm) wire screen. Each cage of bees is placed in the bell-jar duster, a watch glass containing 200 mg of pesticide is placed in the apparatus and the air is exhausted to a vacuum of 18 inches (931 mm) of mercury. Outside air imploding onto the dust sample replaces the vacuum and uniformly disperses the pesticide onto the caged bees. Dusted bees are removed from the equipment and transferred through a funnel into clean cages made from 8-mesh/inch (3.2 mesh/cm) wire screen.

Bees are fed 50% sugar syrup in a vial, held at 80 F (26.7 C) and mortality is recorded at 24, 48, 72 and 96 hours. Each pesticide is evaluated with a series of dust dilutions, three replicates of 25 bees each are used at each dosage level, and each dosage

series is repeated three times using bees from a different colony each time.

Honeybee Subacute Feeding Study

This test would be required for any pesticide which produces an acute contact LD₅₀ of less than 11 micrograms per worker bee.

The investigation will be conducted with newly-established package colonies in new equipment using no less than five colonies per treatment level and control. Treatments will normally be fed in sugar candy in order to reduce consumption of unequal dosages of the chemical. Test colonies are to be held in walk-in cages and provided with water and pollen or pollen substitute. The tests will be continued for at least 42 days, allowing for at least two complete brood cycles. Various observations and measurements will be taken at intervals, including area of eggs, open brood and sealed brood; gross colony weight; estimated adult population; and presence or absence of any abnormalities or disease. Todd dead bee traps will be used to allow daily samplings without disrupting the colonies.

Toxicity of Residues on Foliage to Honeybees

This protocol is based on the standardized test system of Carl Johansen which has been developed and used over the past 29 seasons. It would be required for any pesticide which produces an acute contact LD₅₀ of less than eleven micrograms per bee.

Small plots (0.01 acre or 0.004 hectare) of alfalfa are sprayed with a hand sprayer at 20 lb. psi (1406 g/cm²) and 25 gal per acre (233.7 l/hectare). Foliage samples are taken from plots at 2, 8, and 24 hr. after application. If mortality of bees exposed to 24 hr. residues is greater than 25%, sampling at 48 hr. intervals should continue until mortality of bees exposed to treated foliage is not significantly greater than the control mortality.

Test insects are worker honeybees of uniform age obtained from the top supers of colonies. Cages are con-

structed from 150 x 15 mm plastic petri dishes and cylindrical spacers formed from 18 x 2 inch (45.7 x 5 cm) strips of wire screen. Squares of cotton (2 x 2 inches or 5 x 5 cm) soaked with 50% sugar syrup are placed in the bottoms of the cages. Foliage samples are cut into 1-2 inch (2.5-5 cm) lengths and mixed thoroughly. Approximately one pint of treated foliage is placed in each cage. Then a group of bees are anesthetized with carbon dioxide and 50-100 are added to each cage.

Cages of bees are held at 75-78 F (24-25.6 C) and checked for mortality after 24, 48, and 72 hr. At least three cages of bees should be tested per replicate and each treatment should be replicated at least three times over time to reduce variability due to weather conditions.

Field Testing

This protocol would be required when data from the subacute feeding study indicates adverse effects on the colonies other than acute mortality, when residual toxicity studies indicate an extended problem, or when other studies indicate properties of the pesticide beyond acute toxicity, such as reproductive or chronic effects.

Such things as isolated field plots, use of dead bee traps and pollen traps, chemical analysis of bees and pollen, and use of various brood measurements may be useful in such investigations.

Following is a suitable field plot technique: One acre plots of white mustard, *Brassica alba*, are seeded in fields several miles apart in an area and at a time with a dearth of pollen and nectar plants. Mustard is an excellent plant for such studies because it has open flowers easily contaminated by sprays, it is attractive to honeybees for both pollen and nectar, and it is not highly objectionable to the landowner because of hard seeds or other noxious weed characteristics.

After the plants are starting to bloom, two colonies of honeybees are

(Continued on page 224)

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Sequential Toxicity Tests For The Honey Bee

(Continued from page 222)

placed next to each plot. Pollen traps and Todd dead bee traps are installed one day later and treatments are applied at least one week later. This system will provide for bee, pollen, and honey samples and is compatible with EPA experimental permit requirements. It also provides field contamination level data necessary to establish realistic dosages for subacute feeding trials.

A method for determining the effects of a pesticide on honeybee larvae under field conditions was described by Dieter Wittman at a symposium on bee poisoning test systems held at Wageningen, The Netherlands in September 1980. Groups of fifty worker larvae 2-4 days old are selected on frames containing sizable amounts of uncapped brood. These patches of larvae, five cells wide and ten cells long, are marked by placing a metal pin in the cell adjacent to each corner. Six frame samples are used for each treatment

being tested and an equal number for the untreated check. Five days later, when all cells should be capped, the number of missing larvae are recorded. Typical losses are 5-10% in the checks.

Conclusions

A tier system of test protocols has been organized by a panel of experts. Tests fall into a range from the simplest and least expensive to the more complex and costly. Requirements for testing at the more complex levels would depend on results from the more basic tests. Two of the major test procedures, the acute contact and the residual toxicity studies on adult honeybees, are based on well-established and standardized systems. Only one protocol, the subacute feeding study, requires testing and validation. A number of variables and details must be investigated before a stable and reproducible method can be established.

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Obituaries

V. Rev. Archpriest Basil Ostas

V. REV. ARCHPRIEST BASIL OSTAS died January 16, 1982, after suffering a stroke. He came to America in 1939 from the Ukrainian Soviet Socialist Republic.

Rev. Ostas was a fellow beekeeper, having learned the trade as a monk in the Ukraine. He had his first bees in this country after settling in Auburn, N.Y., where he had his apiary until his death. He was known as "The Honey Priest" throughout northeast U.S. and Ontario, Canada. All monies received from his honey sales were used to bring young and old Ukrainian families that were displaced in Europe (Germany, Poland, etc.) to the U.S. and to help them get started in the Central New York area.

Homer A. Icenhower

HOMER A. ICENHOWER, 75 retired police lieutenant of the Washington, D.C. force died January 5, 1982.

Icenhower was an active member of the Maryland Beekeepers' Association and the Eastern Apicultural Society, Inc. He performed a valuable service for the EAS by being a representative for the organization in Washington attending to tax matters.

Surviving is his wife of 52 years, Frances M. Icenhower of Washington, two sons, D.C. Air National Guard Co. Wayne Icenhower and Dr. David E. Icenhower of Bowie, one brother, one sister, six grandchildren and five great grandchildren.

He was a man of many gifts of talent who touched the lives of many beekeepers. □

George W. May

GEORGE W. MAY of Chicago, Ill., founder of the commercial apiary called George W. May and Son Honey Farms of Marengo in north-central Illinois, died on January 31, 1982 at his

home in Chicago.

George May had retired from the Borden dairy company in Chicago after forty years of employment. He became interested in beekeeping as a hobby about thirty-four years ago in 1948 when he acquired five colonies. He and his son, Philip G. May, have had as many as 1,400 colonies in their apiary. They operated the largest commercial apiary in the state of Illinois.

May was a member of the American Beekeeping Federation, the Illinois State Beekeepers' Association, and the Cook-DuPage Beekeepers' Association in the Chicago metropolitan area.

George is survived by his son, Philip, of Arlington Heights, Ill.; a daughter, Judith Novak, of Palatine, Ill.; two sisters, Blanche and Mildred, and a brother, Robert; and five grandchildren.

His son, Philip, will continue the family honey business.

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Talk About Honey Pollination — Plus or Minus?

By GLENN GIBSON
Executive Secretary
The American Honey Producers Assn.
P.O. Box 368
Minco, Oklahoma 73059

IN MOST CASES the answer to this question would be: "Yes." The industry fully understands the pluses, but few are aware that in some cases pollination publicity has hurt our cause in Washington. Most congressmen and officials in the Administration understand that honeybees render a great service to agriculture, and they include this information in press releases, letters to constituents and publications. All of us are pleased to see this, but in telling the story we have overlooked one important point — **only a tiny percentage of beekeepers actually receive cash payments for bee rentals. Over 90 percent of beekeepers pollinate for free.** As a result of overlooking this point in promoting pollination, a number in bureaucratic Washington feel that we can solve our economic problems by merely raising the pollination fees.

This shocking realization came to us suddenly during our losing fight to save the indemnity program when a congressman suggested that the pesticide problem could be partially solved if we raised our pollination fees. How do we get into a corner like this? At this point, reasons are unimportant, telling the full story of cash or free pollination is important. Don't be surprised if you are asked if you can soften the effects of cheap imported honey prices by raising your pollination fees.

Our reaction to this misinformation about pollination was to ask the Agricultural Research Service to conduct a study of the number of beekeepers who actually rent their bees for pollination. The report will be available soon.

We have been neglectful in calling attention to the free/paid pollination problem. During the past year I have seen a number of articles in the bee journals and newspapers that mentioned the important pollination value of the honeybee to agriculture, but none gave any indication that most pollination was done free of charge to anyone. We could hardly expect the

scientists who were studying bee pollination of specific crops to cover this point. Neither can we expect industry people to thoroughly study the thinking of congressmen and officials in the Administration if they are not aware of the problem.

Do we need to wait until the Agricultural Research Service report is available before talking about free/paid pollination? NO!!! If you mention the pollination value of the honeybee in your letters to congressmen, please include the following information:

1. Nationally more than 90 percent of American beekeepers pollinate free of charge.
2. Most beekeepers who rent bees for pollination still depend on honey production as an important part of their

income.

3. My own bees are used for honey production — giving free pollination; or Bees in my state are used _____ percent for pollination _____ percent for honey production.

4. Dollar value of honey production and pollination in your state. This should stop all talk about solving our problems by raising pollination fees.

At the moment a number in the industry are writing their congressmen and officials in the Administration about our problems with price supports/imports. This is fine. The more the merrier. I am hopeful that this will continue throughout the year. Beekeepers, your letters are important. Keep up this good work. We can use all of the help we can get. □

Alaska's First Beekeepers' Teleconference

(Continued from page 216)

stay current with your needs and activities; you — the beekeepers — can exchange information with yourselves and the Extension Service." Then she added, "I'll need help, I don't know beekeeping. It's almost entirely up to you."

A combined offer-request-challenge like that won't go begging long, if the ensuing comments were an indication.

Other subjects talked about were overwintering (Pirker's method with bee house, Peer's outdoor bundling system, variations of each and individual ideas), management problems, the just-past terrible season (all but a total loss throughout the state with the exception of Delta Junction), future legislation, and a long discussion on greater efforts towards public relations and information and beekeeping classes.

Alaska's first statewide beekeepers' telecon, pioneered by Vandre through the University of Alaska's teleconference network,

was stimulating and productive. Such a group of beekeepers focuses approaches and outlooks. Digression is limited; concentrated thought, evident. Verbally toss a poorly hatched concept to 25 interested participants and chances are they'll dissect, examine, restructure and assemble a working model within minutes. Discussions are entertaining and informative. And there's even more.

As one Fairbanks conferee stood and stretched after the mikes were turned off, he grinned and said "By golly, I learned something tonight!"

Naturally. We all did. The teleconference theme is education. □

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4 Lbs. W/Queen	5.75	8.50	
5 Lbs. W/Queen	6.25	9.25	

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QUEENS ARE SHIPPED POST PAID.

Packages can only be shipped parcel post. To book parcel post orders, check or money order must accompany order. Prices are subject to change.

Live delivery on package bees can only be guaranteed until May 20th.

Marking and/or clipping of queens is 50¢ extra per queen.

QUEENS

Caucasian and Italian Queens

1-9 — \$6.50	10-24 — \$6.25
25-99 — \$6.00	100-up — \$5.50

Large select well developed.

Clipped and/or Marked
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Nacogdoches, TX 75961

10% deposit required to book orders.

The balance due on delivery.

Norman's Italian Bees & Queens



Prices till May 20th

2 lb. pkg. w/q	25-up — \$17.00
1-24 — \$17.25	

3 lb. pkg. w/q	25-up — \$20.00
1-24 — \$20.50	

Young laying queens

1-10 \$5.75	11-24 \$5.50
-------------	--------------

25-up \$5.25

Prices After May 20th

2-lb. pkg. w/q — \$14.00

3-lb. pkg. w/q — \$17.00

Young laying queens

1-10 — \$3.25	11-24 — \$3.00
---------------	----------------

25-up \$2.75

Bees bred from top honey producing colonies. We would appreciate an order from you.

NORMAN BEE CO.

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QUEENS

Hastings Carniolans

(Remember, honeybees are the backbone of agriculture.)

Queens	1-24	25-99	100-up
May.....	\$7.00	\$6.00	\$5.50
June 1st on.....	7.00	6.00	5.00

STRACHAN APIARIES, INC.

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For Breeder Queens — Write: Hastings, Box 604, Birch Hills, Sask., Canada S0J 0G0

News and Events



Meeting Notices

The deadline for publishing notices of beekeeping meetings in *Gleanings* is the fifth of the month preceding the month of issue. For example, if you wish the meeting notice to appear in the April issue you must have the notice arrive in the *Gleanings* office by or on the fifth of March. We plan to have *Gleanings* in the hands of each reader before the first of the month of the month of issue but this is not always possible due to unavoidable circumstances. In any event it is best to give us information about meetings well in advance so that the current issue events which will be upcoming and not at a date already past.

OKLAHOMA Red River Beekeepers' Association

The first beekeepers' association to ever be organized in the farming county of Choctaw in south-central Oklahoma was organized February 13, 1982.

The organization, Red River Beekeepers' Association was formed at the end of a three week bee class. The new association has nineteen charter members and will meet the last Thursday of each month at 7:00 p.m. in the M & M building on the west side of Boswell. Anyone interested is invited to attend. M. J. Bragg is President.

GEORGIA Floyd College Beekeeping Courses

Two beekeeping courses will be

given at Floyd Junior College, Rome, Georgia. These courses will be held at the home of the instructor, John Morris in Silver Creek. Beekeeping I (Session 1) will begin on March 30 and will be on Tuesday evenings, 7-9 p.m. for four weeks. Session 2 will begin April 10 and will be on two Saturdays from 2:00 to 5:00 p.m. The course fee is \$20.00. Beekeeping II, for the advanced beekeeper, begins on Thursday, April 1 and will continue for four weeks, 7-9 p.m. The fee is \$20.00.

Call John Morris at 232-8231 or the Public Service Office of Floyd College at 404-295-6324 for additional information.

NEW YORK Finger Lakes Beekeepers Club

The Finger Lakes Beekeepers Club invites all interested people to its
(Continued on page 230)

Proposal For N.J. Pesticide Notification Program

By LIZ RODRIGUES
Colts Neck, NJ

MOST OF THE problems in New Jersey in regard to the use of pesticides are caused by private applicators who do not have to notify beekeepers when they plan to apply pesticides in a given area.

Bob Myers of the Office of Pesticide Control, of the N.J. Department of Environmental Protection came before the New Jersey Beekeepers' Executive Board on September 25, 1981, and reported that regulations governing pesticides are in the process of being updated.

Included in this, he would like to see provisions included for an early warning-system, a pesticide notification program to alert beekeepers of impending pesticide applications by private applicators in targeted areas.

The key to the success of this type of notification program lies in the speed, accuracy, and thoroughness of individual beekeepers operating within a targeted area being warned that spraying will take place in that area.

The New Jersey Beekeepers' Association has the power and motivation to maintain a pesticide notification network capable of quickly informing individual beekeepers by a voluntary self-notification network at no cost to State, County or Towns.

In this type of an early warning notification network, private applicators would have to notify and secure a permit from the Town, at least 96 hours prior to the commencement of the work. The Borough of Bloomingdale, N.J. has adopted this ordinance.

The permit shall require that the occupant of the property to be sprayed be notified personally, or by first-class mail, (all occupants of property), 72 hours prior to said spraying.

Notification shall include the date, time and any alternate dates and times the property will be sprayed, and shall be placed on file with the Town at the time a permit is issued.

It shall be the obligation of the

Town to provide the Borough Clerk with the name and address of their designated representative, and to provide the Borough Clerk with an updated location map of all bee hives in the Borough, with a list of the names, addresses and telephone numbers of all beekeepers by March 15 of each year. Said map shall be posted in the office of the Borough with the list of names, addresses, and telephone numbers of all beekeepers.

Spraying requiring a permit hereunder shall not be permitted during the periods from 10:00 a.m. to 7:00 p.m. inclusive within 2,000 feet of a bee hive registered with the Borough Clerk. Spraying requiring a permit hereunder shall be permitted from dawn to dusk in all other areas of the Borough.

Failure to secure a required permit by a pesticide applicator and/or failure to provide proper notice by a property owner, leaseholder, tenant, or occupant shall subject same to a fine of twenty-five dollars (\$25.00).

The Town would notify one beekeeper, and in turn, that beekeeper would telephone three other beekeepers, etc.... □

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McCARY'S ITALIAN PACKAGE BEES AND QUEENS

WHY SETTLE FOR ANYTHING LESS, WHEN YOU CAN GET THE BEST

THESE PRICES START MAY 5th

	1-4	5-19	20-49	50-up
2-lb. W/Q	\$17.65	\$16.40	\$15.45	\$14.90
3-lb. W/Q	21.90	20.10	19.05	18.55
4-lb. W/Q	26.10	24.10	23.55	22.95

Package Price Includes Postage, Insurance And All Handling Fees.
If Packages Arrive Damaged File Claim For Insurance With Your Post Office.

	1-4	5-24	25-99	100-up
Queens	\$4.00	\$3.25	\$3.00	\$2.75

Packages To Be Picked Up At Our Apiary * Prices Starting May 5

2-lb. W/Q - \$11.50 3-lb. W/Q - \$14.50
4-lb. W/Q - \$19.50

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April 1st to May 15th

1-5 \$6.00 — 6-25 \$5.50

26-99 \$5.25 — 100-499 \$5.00

500-up \$4.75

After May 15th

1-5 \$5.50 — 6-25 \$5.00

26-99 \$4.75 — 100-499 \$4.50

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In Lots Of	Queens	2-Pound & Queen	3-Pound & Queen	4-Pound & Queen	5-Pound & Queen
1-10	\$6.10	\$19.00	\$24.00	\$29.75	\$35.75
11-99	5.60	18.50	23.50	29.25	35.25
100-up	5.35	17.75	22.75	28.75	34.80

Mark Queens — 35¢

Clip Queens — 35¢

Queens are shipped postpaid — Packages are F.O.B. Mt. Vernon, GA
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- * Clipping and/or marking 50¢ extra
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	ITALIAN	STARLINE
1-24	\$7.25	\$7.75
25-99	6.50	7.00
100-up	6.00	6.50

Clip and Mark 50¢ each

Deposit of \$1.00 per queen required to book order Payment due in full two weeks before shipping date.
Deposit forfeited if order is cancelled.

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ITALIAN QUEENS

	Queens	3-frame Nuc
1-4	\$6.75	\$30.00
5-49	6.25	28.00
50-99	6.00	27.50
100-up	5.75	27.50

Book with 15% deposit.

Nucs F.O.B. K.C.

R. C. OTTE, Route 2, Box 99A, Karnes City, Texas 78118, Phone: 512-780-3521

News and Events

(Continued from page 228)

meeting at 2:00 on Sunday, April 18, at the Farm and Home Center, 225 Fulton St., Ithaca, N.Y. Gerald Stevens, Director of the Apiary Inspection Service for New York, will be the special guest with an illustrated talk on bee diseases, and this will be followed by questions and answers with an emphasis on helping beginners get started in beekeeping, and then refreshments.

ONTARIO, CANADA Fanshawe College Practical Course in Beekeeping

This is a course for people who keep bees and want to improve their methods as well as for the novice who wants to learn practicable methods of producing honey efficiently. Problems encountered regarding pollination of vegetable and fruit crops will be considered. Instructor again this year is Harold Killins, B.S.A. He is thoroughly experienced in beekeeping. Nine two hour sessions starting April 5. Apply to Mr. Dan Link, Fanshawe College, 520 1st Street, Bay 20, London, Ontario. Phone (519) 452-4425.

NEW YORK Beekeeping Short Course

Cornell University, Ithaca, NY 14853, July 16-18, 1982. (\$15.00 advance registration required — not refundable but will be deducted from total amount.)

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

Participants will stay in student dormitories and eat in the university dining room. Lecture and demonstration rooms are air conditioned; the dormitory dining room and lecture hall are within a few hundred feet of each other. Enrollment will be limited. The total cost is \$100 per person. This includes a single room for two nights, three meals on Saturday and two on

Sunday, all instruction materials and the advance registration fee. Double rooms are \$5.00 less per person (total \$95/person). Full linen service is provided. Registration forms may be obtained from: Office of Apiculture, Department of Entomology, Comstock Hall, Cornell University, Ithaca, New York 14853. If necessary to phone, call (607) 256-5443.

PENNSYLVANIA Beekeeping Course

There will be a course on beekeeping at Mansfield State College, Mansfield, PA 16933 on May 5, 6, & 7, 1982. Instructors, W. W. Clarke, Jeff Clarke, and H. Lee Hoar. Fee — \$36. Content: honeybee (history, duties, diseases), beekeeping equipment, making a start in beekeeping, spring and fall management, swarming, and marketing honey. For more information write Division of Community Research & Services, Mansfield State College, Mansfield, PA 16933.

CALIFORNIA Short Courses at Davis

A weekend lecture course on beekeeping will be taught by Dr. Norman Gary, who teaches beekeeping at the University of California, Davis Campus. The course is scheduled for Saturday and Sunday (9-5), April 3 and 4, on the UC Davis campus at the Bee Biology Facility.

Books, veils, or other equipment are **not needed because this is a lecture course**. Dr. Gary gives special attention to the problems of students and provides plenty of time for questions and discussion.

The above lecture course will be followed by a practical, one-day workshop in beekeeping at the same location from 9-5 Saturday, April 24 and repeated on Sunday, April 25.

Students should register as soon as possible (at least two weeks before class) to be assured of admission. Enrollment is limited. These popular courses have been filled to capacity each time they have been offered during the past several years. Send your credit card number or a check payable to the Regents of the University of California, to: University Extension, University of California, Davis, CA 95616. You may enroll by calling (916) 752-0880. The two-day lecture short course is \$70 and the one-day workshop is \$50. Students

will be admitted without prior registration **ONLY IF SPACE REMAINS**. Bring picnic lunches for convenience!

NEW YORK Northern New York Beekeeping Seminar

Our fourth annual Beekeeping Seminar will be held at Miner Center, Rt. 191, Chazy, New York on Saturday, April 24th from 9:00 a.m. to 3:30 p.m.

Guest speakers will be: Dr. Roger A. Morse, Professor of Apiculture, Cornell University. He will be speaking on "Spring Management" and will be available to discuss individual beekeeping problems. Gerald Stevens, N.Y.S. Apiculturist will be speaking on "Disease Control Practices," and John Barrett, President of the Champlain Valley Beekeepers' Association will be demonstrating how to install package bees.

There is no admission and a box lunch will be available for \$2.75.

The program is sponsored by the William H. Miner Agricultural Research Institute and the Champlain Valley Beekeepers' Association.

MASSACHUSETTS Middlesex County Beekeepers' Association

The regular monthly meeting of the Middlesex County Beekeepers' Association will be held Saturday, March 27, 1982, at 8:00 p.m. at the Waltham Field Station, 240 Beaver Street, Waltham, Mass.

WEST VIRGINIA 1982 EAS Conference

All beekeepers are invited to West Virginia to attend the Eastern Apiculture Society Conference, August 4-7, in Morgantown and to find out what "Almost Heaven" is really like! Inspiring and informative workshops, talks and panel sessions for beekeepers of all ranks will highlight the annual meeting. Apiotherapy, bee diseases, alternatives to pesticides, mead making, and transferring box hives are among the topics which will be presented. The Master Beekeeping Program, a Beekeeping Short Course (Aug. 2-4),

(Continued on page 234)

ITALIAN PACKAGE BEES AND QUEENS

Quantity	2-lb. w/queen	3-lb. w/queen	4-lb. w/queen	Queens
1-5	\$21.75	\$26.75	\$31.75	\$7.65
6-25	20.75	25.75	30.75	7.00
26-99	20.00	25.00	30.00	6.45
100-499	19.25	24.25	29.25	6.00
500-up	18.75	23.75	28.75	

Marking queens — 50¢

Clipping queens — 25¢

Add for shipping packages via parcel post:

1 — 2-lb.	\$4.60	1 — 3-lb.	\$4.50	1 — 4-lb.	\$6.95
2 — 2-lb.	6.80	2 — 3-lb.	7.70	2 — 4-lb.	8.80
3 — 2-lb.	7.90	3 — 3-lb.	8.80		

Add shipping prices to packages if ordering by mail. Shipping charges include postage, insurance, special handling fees, and handling charges. Insurance coverage is for full value of bees only. Insurance does NOT cover shipping charges.

A \$5.00 per package deposit is required to book orders; balance due 2 weeks prior to shipping. Personal check, money order or cashier's check accepted in U.S. currency only. Credit cards not accepted. Queenless packages available. Queens are Postpaid and shipped Air Mail.

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QUEENS — ITALIAN

1-10 — \$7.00

NUCS — 5 FRAME

1-10 — \$28.00

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Frames Exchanged
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FULL COLONIES
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ATTN.: BEEKEEPERS IN THE NORTHEAST

Italian & Caucasian Bees Available at Competitive Prices (U.S.)

	1-5	6-24	25-99	100 +	+ Transport
Queens	\$ 7.15	\$ 6.90	\$ 6.65	\$ 6.20	—
2 lb. Pkg.	22.55	21.70	20.85	19.50	2.75
3 lb. Pkg.	28.90	27.80	26.70	25.05	3.20
4 lb. Pkg.	35.80	34.45	33.05	31.00	3.30

Postage not included — Loads each week April 15 — May 15
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— LIVE DELIVERY GUARANTEED —

ALSO A COMPLETE LINE OF BEE SUPPLIES

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CAUCASIAN — MIDNITE — STARLINE

"DOUBLE HYBRID"

on request

Caucasian Queens
Midnite Queens
Starline Queens

1-10
\$7.40
7.90
7.90

11-39
\$6.85
7.35
7.35

40-99
\$6.40
6.90
6.90

100-499
\$6.00
6.50
6.50

500-up
\$5.85
6.35
6.35

"DOUBLE HYBRIDS" same price as regular hybrids. For clipping and/or marking add 50¢ per queen.

2-lb. pkg. w/Cau. Q.

1-10
\$23.45

11-39
\$22.25

40-99
\$21.00

100-up
\$19.65

3-lb. pkg. w/Cau. Q.

29.45

28.25

27.00

25.85

2-lb. pkg. w/Hybrid Q.

23.95

22.75

21.50

20.35

3-lb. pkg. w/Hybrid Q.

29.95

28.75

27.50

26.35

WRITE FOR TRUCKLOAD QUANTITIES. PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

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Breeders chosen from the Worlds

Leading Honey Producer.

Drone Mothers are outstanding Kona
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Italian Queens & Caucasian —

Italian cross Queens mated under
ideal conditions on the beautiful
Kona Coast of Hawaii.

Quantity

1-4

5-31

32-99

100-999

1000 & up

Postpaid

\$7.50

\$6.90

\$6.40

\$5.90

\$5.80

Book your orders early!

Write or call our office.

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PARCEL POST PACKAGE BEES

3-lb. w/q — 1-3 \$27.50 — 4-25 \$26.75
26-99 \$26.00

Add for shipping

1 pkg. \$4.85 — 2 pkg. \$7.00
3 pkg. \$9.00

CARNIOLAN QUEENS

1-4 \$8.25 — 5-25 \$7.50 — 26-99 \$7.00
100-up \$6.50

Prices include shipping, insurance and
special handling.

Queens clipped or marked 50¢ each

Queens after June 1 will be \$5.50 each

HIGH SHOALS APIARIES

Box 665 B High Shoals, GA 30645
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ITALIAN PACKAGE BEES AND QUEENS NO DRONES

We ship pure worker bees by your truck, car, trailer or by
parcel post. Prices are F.O.B. Funston, Ga.

With

Queens	2 lbs.	3lbs.	4lbs.	5lbs.	Queens
1- 24	\$19.80	\$24.85	\$30.20	\$35.85	\$6.75
25-100	\$19.10	\$24.20	\$29.55	\$35.15	\$6.50
101-499	\$18.55	\$23.65	\$29.00	\$34.60	\$6.25
500-up	\$18.20	\$23.25	\$28.60	\$34.25	\$6.00

Clipping Queens 50¢ each — Marking 50¢ each

For queenless packages deduct \$3.00 from above prices

Get worker bees only, don't pay for up to 20% drones
you usually get in your package bees.

Packages can be shipped only by parcel post or your transportation. Get away for a few days, pool your order with your neighbor, pick your bees up here and save the postage. Deduct \$.75 each if you bring your own usable cages. \$3.00 deposit per package required to book your order — balance due 15 days prior to shipping date. For most desirable shipping dates book your order early.

We feed Fumidil-B for healthier stronger more vigorous
queens and bees.

Prices subject to change without notice.

Thank you!

Shipping dates April 1st thru May 20th



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1982 Summer Special Three Banded Italian Package Bees & Queens

Prices effective May 5th

	1-9	10-24	25-99	100-up
2-lb. W/Q	\$16.25	\$15.50	\$15.00	\$14.75
3-lb. W/Q	20.50	19.00	18.50	\$18.25
Queens	4.00	3.25	3.00	2.75

This price includes Postage and Insurance

Packages picked up at our Apiary.

Any number 2-lb. W/Q \$11.00 3-lb. W/Q \$14.00

Fumidil-B fed to all Colonies and
Queen Nuclei.

1000 single story colonies of bees for sale
after May 15th in good equipment write or
call for prices.

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9 MIDNITES
8 ITALIANS
2

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Have you tried York's bees and service? Make 1982 your season to purchase your bees from a firm featuring both types of hybrid stock. New Starlines and Midnites continue to be the only privately developed strains of hybrids that consistently return more honey per colony. Be modern and use hybrid queens that produce vigorous workers which will extend your season and add to your total crop. Shipment made by parcel post, or your truck or station wagon. Information leaflets available on Starlines and Midnites; write us for your copy by return mail. Now booking for choice dates.

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Bees & Queens

For Hobbyist — Honey Producer — Pollinator

ITALIANS

	1-3	4-25	26-99	100-up
2-lb. pkg. w/q	\$20.75	\$20.00	\$19.25	\$18.75
3-lb. pkg. w/q	26.25	25.25	24.50	24.00
5-lb. pkg. w/q	39.50	38.50	37.50	36.50
Queens	6.75	6.40	6.20	6.00

STARLINE OR MIDNITE

	1-3	4-25	26-99	100-up
2-lb. pkg. w/q	\$21.25	\$20.50	\$19.75	\$19.25
3-lb. pkg. w/q	26.75	25.75	25.00	24.50
5-lb. pkg. w/q	40.00	39.00	38.00	37.00
Queens	7.25	6.90	6.70	6.50

Prices F.O.B. Jesup

Queenless packages — deduct \$3.00 per pkg.
Tested Queens — add \$1.00 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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SHIPPING RATES AND INFORMATION

Shipments start first of April depending upon spring weather conditions.

Help us to help you

ORDER TODAY

1982 PRICES ITALIAN QUEENS

W/Q	1-10	11-99	100-up
2-lb. pkg.	\$17.50	\$17.25	\$16.75
2½-lb. pkg.	20.00	29.50	19.00
3-lb. pkg.	22.00	21.50	21.00

WRITE OR CALL FOR LARGER ORDER PRICES
AND/OR POSTAGE RATES
Package Prices \$2.00 Less Per Package After
May 10, 1982

QUEEN PRICES INCLUDE POSTAGE
ALL QUEENS FED FUMIDIL-B
No. of Queens and Price

1-10	\$5.75	11-99	\$5.50
100-up	\$5.25		

Marked : 30¢ Clipped: 30¢ ea.
Tested: 75¢ ea.

TERMS: Orders \$100 or more, 10% deposit and balance due 2 weeks before shipment—others, cash with order.

Queen Prices Will Be Reduced After May 10, 1982
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QUALITY BRED CAUCASIAN & ITALIAN BEES & QUEENS

2 lb. w/q — \$20.00 3 lb. w/q — \$25.00

QUEENS 1 - 49 — \$5.50 50 - up — \$5.00

The above prices include postage, special handling, and insurance fee.

Packages to be picked up at our Apiary

2 lb. w/q — 16.00 3 lb. w/q — \$21.50

10% books order. Balance two weeks prior to shipment. Health certificate furnished.

HOLDER HOMAN APIARIES

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NUCS \$25.00

Hybrid stock, bees, brood and queen.

F.O.B.

DIXIE HONEY CO.

E. A. Cannady 919-579-6036
Rt. 3, Box 2068 Shallotte, NC 28459
Mailable in disposable containers.

News and Events

(Continued from page 230)

the annual Honey Show, bee beards and a trip to a commercial apiary are also scheduled.

So plan your summer vacation now and discover why we're called Wild, Wonderful West Virginia. For free information on where to go and what to see in the Morgantown area write the Mountaineer Country Travel Council, P.O. Box 1197, Morgantown, WV 26505 and free packets on West Virginia are available from Travel, Capitol Complex, Charleston, WV 25305.

More details of the EAS Meeting will appear in the next issue of *Gleanings*.

UTAH Western Apicultural Society Conference

The Western Apicultural Society 1982 meeting will be in Logan, Utah August 16th through August 20th at Utah State University.

Preregistration is \$30 per person; \$35 at the door; and \$15 for a child under 12. Breakfast is served 7:15 a.m. Tues., Wed., Thurs., and Fri. \$2.25 Lunch is \$3, Dinner \$4. Housing in the dorms, including bedding and towels, is as follows: Double occupancy, \$7.00 per person per night; Single occupancy, \$10.50 per person per night; and child 2-17 yrs. with parents, \$5.50 per child per night.

In addition to dorm housing there is on campus a University Residence Center. The rooms with private bath

are \$23 for one; \$26 for two; \$28 for 3, etc. including color TV.

Housing and campus meals can be guaranteed only if your registration is returned by July 1, 1982 to: Suzanne Blakely, Program Specialist, Conference and Institute Division, Utah State University, UMC 50-A, Logan, UT 84322, Phone 801-750 2302. Make checks payable to Utah State University.

A program will be printed in the next issue of *Gleanings*.

Strictly Backlot

(Continued from page 218)

tell them how I won the "Third Annual How I Heroically Caught a Swarm Contest." And in a postscript, he suggests: By the way, if I don't win the talcum powder, I'm going to tell this swarm you said they could have the run of your house next summer!

Some almost equally heroic efforts came from:
Grove H. Road of Lyme, CT

Mrs. Harvey Gregg of Zephyrhills, FL
M. Nichols of Grantsville, WV
Roland Bell (whom I owe a letter!) of Ft. Worth, TX
Nita Mead (whom I also owe a letter!) of Belle Plaine, KS

The rapidity of the morning doves' cooing in the large spruce next door indicates an exciting swarming season ahead. If you can't enjoy it, at least conjure up a tall tale about it!

INTRODUCING . . .

**Lillian Hill
Hills Bee Supply
Route 3, Box 830
Felton, Pennsylvania 17322
Phone: 717-993-6363**

Lillian Hill has kept bees for six years despite an allergy for which she has taken shots for the last three years. Lillian and her husband live along Muddy Creek in York County, Pennsylvania where they harvest mostly dark, but not strong, wildflower honey. Lillian works by herself, except when extracting, when her husband helps. She also raises sheep and is the librarian at a small rural library.

Lillian reflects the friendly spirit which is characteristic of the nearly four hundred Root Bee Supply dealers who are ready and able to supply you with quality products.



BUY & SELL

Classified rates, 45¢ per counted word, each insertion, payable in cash in advance. Each initial, each word in names and address, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) count as one word. Not less than 10 words accepted. Copy should be in by the 5th of the month, preceding publication. Send classified ads to: The A. I. Root Co., Advertising Department, Gleanings in Bee Culture, 623 W. Liberty St., P.O. Box 706, Medina, Ohio 44258-0706.

MAGAZINES

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

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

THE INTERNATIONAL BEE RESEARCH ASSOCIATION regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Mail inquiries from USA: H. Kolb, P.O. Box 183, 737 West Main, Edmond, OK 73034, Phone: (405) 314-0984. **IBRA PUBLISHES: Bee World**, a quarterly journal for the progressive beekeeper. **Apicultural Abstracts**, a survey of scientific literature from all languages. **Journal of Apiculture Research**, for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership \$1. Specimen copy of **Bee World** \$1.50; **Journal of Apicultural Research** \$1.50; **Apicultural Abstracts** \$2.00, from **INTERNATIONAL BEE RESEARCH ASSOCIATION**, Hill House, Gerrards Cross, Bucks. SL9 0NR, England.

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

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

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

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

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

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

MISCELLANEOUS

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

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

HONEY STRAINER 100 mesh nylon bag. Approx. 18" x 20", Reusable, Practical, Convenient, Instructions, Ppd. \$3.00 ea., 2 up \$2.50 ea. Beckman G2, Box 633, Stuart, Florida 33495.

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

BEEKEEPING BASICS Home Study Course — Eight Lessons Provide Interaction with Larry Connor — \$39 Complete. Box 817, Cheshire, CT 06410, 203-271-0155.

NATIONAL BEEKEEPERS REGISTRY. Register your name on our national mailing list and computer information profile. Sent to manufacturers dealers, etc. Write for information. NBR, 3017 Hanchett, Saginaw, Michigan 48604.

SOOKEE — Beeswax Leather waterproofer. Keeps feet dry! \$1.25. Jurica Apiaries, Johnstown, NY 12095.

German Family Recipes kept secret for decades. First time revealed. Collection of 32 for only \$4.00. Postpaid. **ANDERS**, P.O. Box 632, Somis, Calif. 93066.

BEESWAX

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

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

WANTED — Beeswax any size shape block \$2.00 pound. Prompt payment, small lots welcome. A. vanVees, Greenlane, PA 18054.

HONEY FOR SALE

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

HONEY IN 60's FOR SALE. Bedford Food Products Co., 209 Hewes St., Brooklyn, New York 11211. Telephone: 212-EV4-5165.

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

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

HONEY — TRUCKLOADS or any quantity, all varieties. Write for best delivered prices. Desert Honey Co., 3113 E. Columbia, Tucson, AZ 85714. (602) 746-1084.

FINEST quality Blue Ridge Mountain TULIP POPLAR HONEY in 60's. WHISTLE CREEK APIARIES, Rt. 1, Box 33A, Lexington, VA 24450. (703) 463-3379.

IN DRUMS, CLOVER, SUNFLOWER, WILDFLOWER, ALL LIGHT. Don Kohn, Withee, Wis. 54498, 715-229-2297.

HONEY WANTED

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

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

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

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

All Grades of Honey, Any quantity drums or cans. Call Toll Free

800-248-0334. Hubbard Apiaries, Inc., Box 160, Onsted, Michigan 49265.

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

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

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

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

SEEDS

HOMESTEAD GARDENERS! Vegetable, herb varieties for fresh, home-processed, and home-stored quality. **FREE** 1982 seed catalog/garden guide. **SELF-SUFFICIENT SEEDS.** Barr Hollow, Woodward, PA 16882.

BUCKWHEAT! WHITE BLOSSOM SWEET CLOVER! We have both of these to offer in any size bag that you need. Call or Write: CAUDILL SEED COMPANY; 1201 Story Avenue; Louisville, KY 40206. Call us Toll Free: Inside Kentucky — 1-800-722-5011; Outside Kentucky — 1-800-626-5357.

BOOKS

RICHARD TAYLOR'S FORTY YEARS BEEKEEPING EXPERIENCE IN HOW-TO-DO-IT BOOK OF BEEKEEPING. \$6.95 ppd. LINDEN BOOKS, INTERLAKEN, NY 14847

CLASSIC REPRINTS: Miller's *Fifty Years Among The Bees*, \$7.95 softcover, \$12.50 hard, \$1.00 shipping. Root's 1890 *ABC of Bee Culture*, \$11.50 softcover, \$17.95 hard, \$1.25 shipping. NY residents add 6% tax. Molly Yes Press, RD 3, New Berlin, NY 13411.

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

RECIPE BOOK Healthful Homemade Bread, other original favorites including home canning with honey, plus Danish Fish Boil.

\$2.00. JENSEN'S TORVEHAL. 3130 Oakwood Rd., Hartland, WI 53029.

OLD BOOK & MAGAZINES. GOLLUB, 617 South Laurel, Richmond, VA 23220. Send SASE

PROPOLIS

PROPOLIS U.S.A., ROUTE 8, HAYWARD, WISC. NOT BUYING UNTIL FURTHER NOTICE!

POSITION WANTED

I and my family just came from Romania and are looking for a position in the beekeeping industry. I've had 20 years experience in beekeeping. Please Contact: Alex Denes, 4240 Rocky River Dr., Cleveland, Ohio 44135.

HELP WANTED

Single man with a little experience. to work raising queens in South and producing honey in North. HOWLAND APIARIES, Berkshire, N.Y. 13736. Ph: 607-657-2517.

HELP WANTED: Commercial honey production outfit needs hired help for 1982 season. Golden Valley Apiaries, Rt. 1, Box 48, Fairmont, Nebraska 68534.

ROYAL JELLY

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

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

WANTED

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

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

WANTED TO BUY — 50-100 Two Story Ten Frame Colonies In The Northcentral Oklahoma Area. Phone: 405-762-3346.

POLLEN

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

BEES & QUEENS FOR SALE

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

Three-frame nuclei, package bees, queens and 10-frame single story colonies. Walker Apiaries, Rt. 1, Box 34-B, Rogers, Texas 76569, PH: 817-983-2891.

QUEENS — ITALIAN, 25 at \$5.95 each. NUCS — 5 Frame, 1-10 — \$28.00; 10-50 — \$24.95; 50-100 — \$23.95; Frames exchanged, \$5.00 less each. Full colonies, \$45.00 — 10 Frame. HUBBARD HONEY INC., P.O. BOX 726, BELLEVUE, FL 32620, PHONE 904-245-1106. L. M. HUBBARD — SINCE 1918.

PACKAGE BEES delivered to Wisconsin near Green Bay, Eau Claire and at my home. Ronald Hazard, Rt. 2, Poynette, Wis. 53955. Phone: 414-992-3217.

ANDRE'S APIARY, ITALIAN QUEENS & PACKAGE BEES. We will again be making a delivery into Cental Wyoming and Lower Montana in April. Write for information. Route 2, Box 2752, Oroville, Calif. 95965, (916) 533-7278.

Nucs \$25.00 — 3-frames/queen — Hybrid — guarantee live delivery — Shipped in cardboard container. F.O.B. Dixie Honey Company, E. A. Cannady, 919-579-6036. Rt. 3, Box 206A, Shallotte, NC 28459.

Five Frame Nucs — May pick up in Belmont, NY. Placed in your Equipment \$36.00. \$5.00 deposit per nuc when ordered. Dick's Bees, Upper South Street, Belmont, NY 14814, 716-268-5310.

Five- 6 1/4 frame nucs, new queens, frames and wax, set in your hives, pick up South Florida or Central New

York, April-May (NY stock) \$28.50 — \$6.00 books. 315-497-1258 or W.Z. Eshleman, Star Rt., Clewiston, Florida 33440

One hundred single story hives. 1982 Queens. Good equipment. All or part. \$44 each. 10% deposit. Pat Heitkam, Rt. 2, Box 2542, Orland, California, 916-865-9562 evenings.

WESTFORK BEE COMPANY, Rt.2, Box 54, Federalsburg, MD 21632, (301) 754-8301. Carniolan — Midnight — Italian — Queens \$6.60 each.

Large Yellow Italian Queens 1-5 \$5.75, 6-25 \$5.00, 26 & up \$4.75. Ryland Apiaries, Rt. 2, Box 215, Deville, LA 71328 (318) 466-5309 at night.

Single Story Hives, Story and Half Hives, Four Frame Nuc Boxes, Other Equipment. Information call 904-673-3243.

Four-frame nucs — Golden Italian — shipped postpaid \$33.00. Small orders only. Johnny Pennington, 194 Cooper-Hurst Rd., Pearl, MS 39208. phone (601) 939-5994.

FOR SALE — 250 strong 2-story hives. Mostly new equipment. Carroll Couture, 2304 Fairway Dr., Belleville, KS. 66935. 913-527-5805.

Cleveland and Northern Ohio Beekeepers Package Bees in early April, also complete inventory of Root Quality Bee Supplies. Contact: Tom Jefferies, 24564 Squires Rd., Columbia Station, Ohio 44028, Phone 216-236-5994.

FOR SALE — 100 colonies and equipment. 712-366-0425 or 712-366-1927.

FOR SALE — 800 hives of bees, ten frame standard hives, good combs, heavy with honey, reason for selling — age. G.C. Maxwell, Pamplin, VA 23958. 248-6476.

Banat Carniolan Queens — \$7.00 each ppd. 2-lb. pkg. \$25.00 ppd. Frank Adams, Rt. 1, Box 170, Marion, MD 21838.

Italian Bees and Queens — 2-lb. Packages \$19.00; 3-lb. Packages \$24.00; Queens \$5.75 each. Discounts for quantities over 10. Packages F.O.B. Parrottville. Write for shipping charges. Queens shipped postpaid with live delivery guaranteed. Clipping 25¢ each; Marking 25¢ each. Phone: (615) 623-4988. Long Creek Apiaries, Route 2, Parrottville, TN 37843.

FOR SALE: Complete 900 colonies bee outfit all or part. 313-688-3218.

Detroit area beekeepers, hobbyists. Italian package bees and queens. Available May 1st, order by phone or pick up at my home. No shipping cost 2 lbs. \$21.00; 3 lbs. \$26.00; \$5.00 deposit with orders. Discount on quantity. T. & R. Bee Culture, St. Clair Shores, MI. phone (313) 294-5865.

Italian and Carniolan Queens for sale in early spring \$7.75 each. E. L. Selph, 2502 Winton Rd., Durham, NC 27707. (919) 489-9561.

One hundred two story colonies \$60.00 each. St. Paris, Ohio. (513) 653-3465.

One hundred one story hives of bees — 1981 queens. A bargain at \$45 each. Ancel Goolsbey, E. 9207 Broadway, Spokane, Wash. 99206. Call 509-924-8316.

One hundred fifty colonies, bees all like new. Most two deep — some one deep and two 6 1/8". Each colony with bottom board — inner cover — telescoping outer cover — steel queen excluder and three 6 1/8" supers — 10 frames size with 9 frames in everything \$70.00 each. Cash inquiries only. Gerald Meyer, 1913 Ballard Rd., Appleton, Wis. 54911.

Package Bees delivered to Lower Michigan May 2nd. \$22.00 for 3 pound package. Coombs Apiaries. 616-642-6361.

Twenty two story colonies, Montville, Ohio. Phone 216-968-3745.

One hundred — two hundred established colonies, two story. \$75.00 — \$100.00 each. Extra supers available. J. Raad Apiaries, Williamston, Mich., 517-655-3792.

For Sale: 60 colonies of bees, also some 4x5 fences, holders, section boxes, 10 frame supers, covers, bottoms and misc. 315-684-9069. John Seitz, Canastota, NY 13032.

ITALIAN QUEENS AND PACKAGES QUEENS — April 1 - May 5 — 1-5 — \$6.50; 6-24 — \$6.25; 25-99 — \$6.00; 100 and up — \$5.50. PACKAGES — PICK UP HERE \$15.00 plus pkg. PACKAGES — MAIL SHIPMENT \$20.00. QUEENS SHIPPED DAILY BY AIR MAIL. Fumidil-B fed. RICHARD APIARIES, Rt. 1, Box 2241, Anderson, California 96007. Phone (916) 365-5551 — (916) 365-6556.

Five frame nuclei. May 5th pick up.

Orange Country New York.
914-342-0108.

Fifty hives of bees 2 and 3 story \$60.00. Honey tank w/gate nearly 100 lbs. capacity \$90. Shallow and medium supers. 301-255-0984 -Maryland.

Complete 60 hive bee business in Spirit Lake, Iowa. Write Kim Fodness, General Delivery, Fayetteville, AR 72701.

For Sale — 200 four story colonies. Western Colorado locations. (303) 268-5538.

BEE SUPPLIES FOR SALE

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

FOR TOP QUALITY BEE SUPPLIES and advice on beekeeping problems, visit your nearest Root dealer and send for your FREE Root catalog. Satisfaction guaranteed. The A.I. Root Co., P.O. Box 706, Medina, OH 44256.

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

WAXMASTER CAPPING SEPARATOR and PAC-KING HONEY BOTTLER. All stainless. Fast, reliable, trouble-free. Thousands of satisfied users. Free brochure. **HONEY SALES COMPANY, Mfrs.**, 2817 No. 2nd Street, MINNEAPOLIS, MINN. 55411. Phone: 612-529-6868 or 588-2054 eves.

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

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

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

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

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

PINE BEE SUPPLIES

*Beehives dovetailed — \$3.50
*Super 5 1/4" or 6 1/8" — \$2.50
*Frames heavy duty per 100 — \$28.00
*Frames heavy duty per 1000 — \$250.00
*Lids or bottoms (migratory) — \$2.00 each or \$4.00 per set
Allow manufacturing time on large orders. **Marvin Smith Apiaries, Rt. 1**, Parma, Idaho 83660, Phone 208-722-5278 days.

Observation hive plans and instructions packet \$5. **Kawana Honey**, 2100 G Kawana Springs Rd., Santa Rosa, CA 95404.

MAXANT MARZ Uncapper, Repo. used two months \$4,900.00. **Desert Honey Co.**, 3113 E. Columbia, Tucson, AZ 85714, (602) 746-1084.

USED POLLEN Traps, 100 \$7.50 each for all. **Desert Honey Co.**, 3113 E. Columbia, Tucson, AZ 85714, (602) 746-1084.

For Sale — 1000 Supers with drawn comb. 1000 extracting supers with drawn comb. All 10 frame equipment. Telephone: 913-378-3513.

Dadant Vertical Uncapper used one season — \$150.00. 18 Cobana Supers with frames — \$225.00. 23 Grams Fumidil-B — \$100.00. 901-925-5910.

DRILL POWERED EXTRACTOR KITS, Economical Radial Extractors, and "Super-Lifters", a unique new hive management tool that takes the backache out of beekeeping. Dealer inquiries also invited. **BEE LINE MANUFACTURING**, 1019A St. Elmo Road, Austin, TX 78745, PH: 512-441-5353.

LOW PRICED WOODENWARE IN NORTH CAROLINA — write for catalog — **Catawba Yadkin Bee Supply** — 5394 Williams Rd. — Lewisville, NC 27023.

Deep supers, frames — 300 new put together with foundation. 315-364-8920.

Midwestern type combination lids and bottoms, made of Western Red Cedar. \$3.50 each; F.O.B. **Bruce Merritt**, 8785 Doughty Rd., Bay City, OR 97107.

"Increase your income" "Bee B" Pollen Trap — Easiest way to collect pollen. **Bower's Bee Business** — P.O. Box 457 — Pine Grove, CA 95665 — Phone 209-296-4452.

RADIAL HONEY EXTRACTORS: 5 and 10 frames, Patented, factory made of stainless steel. **Gamble's Honey Extractor Co.**, P.O. Box 7997, Greensboro, NC 27407, Ph: (919) 299-3973 — Day or Night.

One hundred fifty hives, 200 supers, Maxant extractor, uncapper, 250 gal. tank, 1979 Chev 1-ton, Kelley loader and more. **Will Harris** 808 South 13th Ave. Yakima, WA 98902, 502-452-7926.

Ten frame, 250 deep supers, 500 med. deep supers. Good Condition. Plus top and bottoms. **Fred Gerth**, Bowman, ND 58623, (701) 523-3629.

New eight and nine frame spacing tools. Fast and easy to use. Even spacing means more honey on fewer combs. Made of 1/2 inch cast aluminum. Life Time Guarantee. Postpaid 1-\$16.50 — pr. \$29.50. **Wolf Bee Supply**, Box 707, Baldwin, WI 54002.

Frames 1000 - .23 1/2", 100 - 9/16" supers — #1 \$3.80, #2 \$3.10. **Glorybee Honey**, 1006 Arrowsmith St., Eugene, OR 97402, 503-485-1649.

Three hundred hives, on 30 good location in northeast Indiana, equipment for 500 more, 72 frame extractor. Complete outfit, 4000 pound honey. Honey house for rent with or without home. \$14,000. **Levi Pfister**, 10617 Grabill Rd., Leo, IN 46765, (219) 627-3027 or 627-3189.

FOR SALE

Modern (6800 sq. ft.) Extracting Plant, complete with extracting facilities, dwelling and 50 registered locations. (Gopher State) Serious and

Responsible inquiries only please. Available for 1982 season. Send inquiries to L.C. Box 160, Gleanings In Bee Culture, P.O. Box 706, Medina, Ohio 44258-0706.

Up to 1000 colonies — complete with pallets and supers to operate. Available for 1982. Serious and responsible inquiries only please. (Bakini State) Send inquiries to A.C. Box 160, Gleanings In Bee Culture, P.O. Box 706, Medina, Ohio 44258-0706.

WATSONVILLE, CALIFORNIA: For Sale, 1974 GMC commercial flat bed truck with electric three way BOOM for loading bee hives. \$10,000. 3 Gas tanks, 2 axle, unladen weight, 8,120 lbs. mileage 46,000. Harry York, Phone: 408-688-7140.

Frames — 9/8 — 6 1/4. Assembled and wired 50¢ each. Fifty to a carton, postage paid. Bee—T Pollen & Hive Co., Harold W. Bradford, 2505 Stoney Hill Rd., Lancaster, OH 43130.

For Sale: Bee business — 1470 hives — will sell in smaller lots also, 2-story, over wintered hives, supers and equipment, in excellent condition. Phone: 705-835-2308 or Write: Edward Woods, Hillsdale, Ont. L0L 1V0.

HIVE HOIST, 21 ft. boom, aft mount, \$1050. 27445 Rollins Lake Rd. Colfax, CA 95713.

Five gallon plastic pails with lids, used once, excellent condition. \$1.50. *Old Gleanings and American Bee Journal* — 1938-1981. Paul Hilgendorff, Round Top, NY 12473. Phone 518-622-8239.

Six ton caked cane sugar, 100 lb. sacks. Write for prices. Give phone number. Simon Hostetler, Rt. 1, Jamesport, Missouri 64648.

FOR SALE: Wax Embossing Machine (Hawley #M012) and Hawley Ribbon Machine \$7000.00. Write "Bee Flat", Route-4, Box 65F, Reedsport, Oregon 97467. Ph (503-599-2245).

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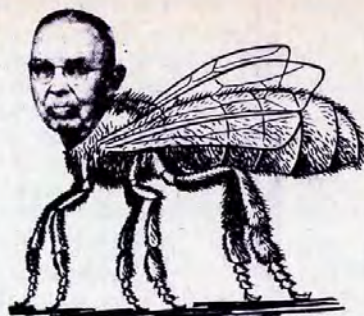
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