Gleanings in

JANUARY 1980

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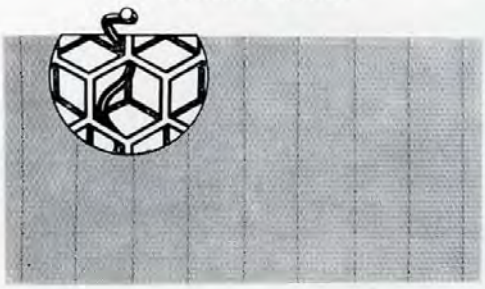

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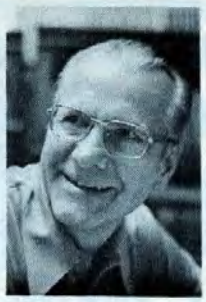

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Gleanings in Bee Culture

January 1980 (ISSN 0017-114X) Vol. 108, No.1
Created to Help Beekeepers Succeed
107 Years Continuous Publication by the Same Organization

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PAPIO VALLEY HONEY HARVESTING KIT

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PAPIO VALLEY HONEY

4801 NORTH 144 OMAHA NEBRASKA 68164

Monthly HONEY Report

LAWRENCE GOLTZ

December 10, 1979

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

Wholesale Extracted

Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged	Reporting Regions 1	2	3	4	5	6	7	8	9
60 lbs.(per can) White	31.20	31.80	33.00			38.40	31.20	33.00	31.60
60 lbs. (per can) Amber	28.80	30.00	31.70			34.80	27.60	31.80	28.60
55 gal. drum (per lb.) White	.53	.54	.57	.54		.58		.53	.53
55 gal. drum (per lb.) Amber	.48	.50	.54	.53		.52		.53	.47
1 lb. jar (case of 24)	22.40	18.00	22.00	20.25	31.50	22.00		23.35	23.78
2 lb. jar (case of 12)	21.15		20.58	18.90	32.00	21.00	21.00	32.40	21.08
5 lb. jar (case of 6)			22.80	20.50		23.50		30.65	26.65
Retail Honey Prices									
½ lb.		.75	.73			.75		.74	.79
12 oz. Squeeze Bottle			1.15	1.12	1.50	1.05		1.15	1.11
1 lb.	1.25	1.20	1.25	1.18	1.75	1.15	1.29	1.24	1.32
2 lb.	2.35		2.33	2.25	3.45	2.15	2.39	2.00	2.94
3 lb.			3.25		5.15	3.40	3.50	3.11	3.39
4 lb.	4.49			4.25	6.80	4.35	4.50		4.15
5 lb.			5.05	4.85	8.50	5.00	5.50	4.76	5.41
1 lb. Creamed		1.25	1.26					1.29	1.37
1 lb. Comb	1.89		1.89		1.85	1.55		1.49	1.60
Round Plastic Comb			1.65				1.50		1.75
Beeswax (Light)	1.70		1.87	1.80	1.80	1.80	1.80	1.75	1.90
Beeswax (Dark)			1.78	1.75	1.60	1.75	1.70	1.60	1.78

Misc. Comments:

Region 2

Above average honey crop, but not as good as 1978. Good honey flow from basswood. Price of beeswax down. Honey market strong. Honey sales fair. Bees going into winter in good condition.

Region 3

Yard work finished and bees went into winter in good condition. Bees filled brood chambers with good honey flow in fall. Honey prices have increased in stores. Demand continues good for both bottling and commercial grades of honey in Indiana and surrounding states. No substantial amounts of honey for sale in Indiana.

Region 4

Honey reported to be moving well in bulk and in retail stores at a rapid rate according to all reporters in these states. Winter has been moderate in Minnesota with flights in Mid-November and early

December. Iowa crop was inproved in 1979 over 1978, approximately 85# statewide. Bees have good populations but some feeding required. Many beekeepers moved bees south. Good rains in Nebraska promise good crop conditions for next year. Look for higher honey prices due to higher demand.

Region 5

Colonies going into winter light in stores in Virginia, much regional feeding. Weather warm until early December.

Region 6

November temperatures and rain fall above average. Condition of bees is about normal. All prices on honey have advanced. Sales continuing good but some slowing down is anticipated.

Region 7

Bees in good condition in eastern Oklahoma, weather dry and cool. Honey sales at retail are good. Bee meetings in southern Oklahoma having good attendance as they are promoted through extension service and state and local bee associations. Inflation is beginning to hurt with the rising costs to beekeepers. Some beekeepers are giving up.

Region 8

Bulk sales to packers has remained steady. Prices have remained steady with no declines noted. Some local producers have been cutting prices to gain a larger share of the market, and this in the face of higher container costs.

(Continued on page 48)

Joe Maher Receives Missouri 1979 Beekeeper of the Year Award

MANY YEARS ago the State Beekeepers' Association in the state of Missouri folded because of lack of interest.

Joe Maher attended a meeting in Florida and tried to voice his opinion, but they would not recognize him because his state did not have a "state beekeepers association". Because of his denial he became determined that Missouri should have an association, thus the Missouri State Beekeepers' Association was reborn.

Mr. Maher became active and helped form local associations in many areas within the state of Missouri. He has served in all of the state offices at one time or another and for many years he prepared and even typed the state newsletter, mailing it out to over 600 beekeepers throughout the state.

Now, while he was resting he helped promote beekeeping in his local area, Kansas City, and is still active in Mid-Western Beekeepers' Association. He has served in almost all of the offices of the Mid-Western Association and was President of the State Association and Mid-Western Association at the same time. He somehow managed during this time to send out the Mid-Western newsletter each month also.

He also was a State Bee Inspector and still is. This beekeeper also used his spare time to teach beekeeping courses in the schools in his local area, and his total student count is now around 300 students. He found time to appear on TV and be heard on radio promoting bees, beekeepers and honey.

An active hobbyist beekeeper for some 31 years, a gentleman, a friend.

It is now with extreme honor that the grateful beekeepers of the state of Missouri announce that Joe Maher has been elected to the office of President Emeritus of the Missouri State Beekeepers' Association for life.

Also, in addition the Missouri State Beekeepers' Association would like to present **Joe Maher — Beekeeper of the Year Award 1979.**

CANADIAN APICULTURE OFFICE MOVES

THE APICULTURE office of Alberta Agriculture has moved to Falher, Alberta from Edmonton. Doug Coulter has recently filled the position of Chief Apiculture Inspector and is working out of Falher. Roger Topping co-ordinates the inspection services in Edmonton while Ulf Soehngen is working in research and extension at the Horticultural Research Center located in Brooks, where he will work on leaf cutter bees, honeybees and other insects.

From **Canadian Beekeeping**

Apiary Inspectors Conference in Laramie

THE 1980 APIARY Inspectors of America Conference was held in Laramie, Wyoming, September, 5 to 7, 1979. Our host, USDA Honey Bee Pesticides Disease Research Facility, headed by Dr. William Wilson provided everyone during the Conference an opportunity to visit and tour the laboratory located at the University of Wyoming.

Participants included 26 State Apiarist, a Provincial Apiarist from Canada, beekeepers, beekeeper suppliers, USDA-SEA personnel and EPA representatives.

Richard Adee in his address to the apiarist called attention to need for a strong link between the beekeeper and the apiary inspector. The apiary inspector needs to keep well informed of all programs available to the beekeeper, insect and pesticide uses, toxicity of pesticides and current research activities. Mr Adee stressed the need of inspectors to keep abreast of bee diseases and all methods of control and as a PR man to promote pollination and honey. Mr. Adee stated that, "You, the inspector, are the key to a healthy, well regulated industry. If you fail in your job, the entire industry loses."

Speakers on the program covered many subjects which dealt both directly and indirectly with the beekeeper from pesticides, diseases, bee sting allergies to bee management techniques.

Dr. H. Shimanuki and Dave Knox from the Environmental Bee Lab at Beltsville covered the present bee research at the Beltville Laboratory. Efforts are underway to secure registration of sodium sulfathiazole for American foulbrood disease.

Dr. Frank Parker, USDA, Logan, Utah, spoke to the apiarists about the wild bee laboratory and his investigations with wild bees such as the alkalai bee for alfalfa seed pollination.

The business session reflected the tone of the meeting with beekeeper oriented resolutions to improve and protect the Beekeeping Industry in our great Nation.

1. Supported a continued funding of the Beekeeper Indemnity Program of ASCS.
2. Requesting the Environmental Protection Agency to require tests on the safety of pesticides to beneficial insects prior to registration of pesticides.
3. Request NASDA to go on record in supporting of accelerated funding and staffing of the Apiary Inspection Programs of all states.
4. Support increased research on pollination of food crops including soybeans, sunflowers and cotton.
5. Request NASDA seek assurance from the Environmental Protection Agency that all microencapsulated pesticide materials be color coded.
6. Support issuance of a honeybee commemorative postage stamp.

Two committee sessions studied in-depth the inspection and certification of migratory bees and recent developments in treating bee diseases with etheylene oxide. Ten states now have a 24(c) registration of use: Delaware, Maryland, Mississippi, Nevada, New Hampshire, New Jersey, Oregon, Tennessee, Virginia, West Virginia.

Elected new officers who will take office January 1, 1980, are: President Bob Hancock, Arizona; Gordon Rudloff of Ohio, Vice President; and retained Floyd Hilbig of Reno, Nevada, as Secretary-Treasurer. New Board Members elected were Elroy Begalka, South Dakota; James Bach, Washington; and James Herndon, Florida.

The next AIA Conference will be held in Las Vegas, Nevada, January, 1981.

Learning From the Bees

Grant D. Morse, Ph. D.
Saugerties, N. Y.

WE CAN LEARN quite a bit about ourselves by studying the honeybee. For one thing, both of us are happy by nature; we're happy also as a result of our occupations — they with theirs, and we with ours.

A beekeeper is doing the kind of work he likes best — and he's self employed. In our modern society it's a bit difficult to be self employed. Being self employed entails taking risks. Most men and women work for someone else. Large working units are required to produce most of the commodities that are bought and sold — cars, clothing, plumbing equipment, and so on.

Employers worry a lot. That's character building in itself. When a self employed person succeeds in his enterprise he experiences satisfaction out of conquering his challenges and his worries such as an employee never experiences.

The typical employee lives a life that is almost unnatural. He has little to worry about, or so he thinks, because he is so far removed from the main thrust of a business that he gets to thinking that what he does, or fails to do, is not too important. It seems that he too seldom regards his work as essential to the success of the business.

In order for the individual employee to worry a bit, and to feel satisfaction when he conquers his worries, he must either be given reason to feel the importance of his contribution, or else he must personally arrive at the conclusion that he's a significant factor in the whole project.

Since the employee often tends to downgrade the significance of his contribution to the total achievement of the business or corporation, the employer who is keen tries to persuade the employee of his importance. Too often the employer is not successful in this detail. Too often he assumes that the employee understands his importance. This is not easy to bring about. So often we see no one express appreciation for the extra increment of effort, or concern, or worry expended by the conscientious employee.

Because of close contact, the owner and operator of a small business can often supply an expression of appreciation for work well done by an employee. He thereby motivates his workers in an honest, thankful way. Large corporations have to work through district managers, or supervisors. Many of today's large corporations rate each worker's achievement periodically and tend to reward him financially accordingly. This in itself takes on the nature of approval and appreciation if the worker's efforts have been valuable. Under such a plan it is extremely depressing to an employee if his superior who does the rating is not a discerning individual. But herein, never-the-less, the employee has his turn at worrying a bit — and a bit of worrying is character building.

The Cooperative Honeybee

It's difficult for one society to learn from another, especially when the two are so far apart in nature as in the cases of human society and the honeybee society. Thomas (1974) says it is quite bad form in biological circles to imply that the operation of insect societies has any relation at all to human affairs.

There is one significant element present in the honeybee society which most humans seem to have missed. It might be called ideal individualism. It lies in the attitude of the individual honeybee. She does not regard herself as merely an equal among thousands. She regards herself as the one who is responsible for the success and operation of the whole nest, with the other workers merely cooperating. She exhibits the same feelings and attitudes that were hers when she was a solitary bee. Although she has surrendered the egg laying function to one superb female (not totally, however, since she is always willing to try to return to performing that function if the queen is lost), she has retained a sense of responsibility for all the details of performance in the nest. No one gives her orders (even in an emergency only a signal is given — and what descendant of a solitary bee would not help out a neighbor?) No one tells her what to do. She already knows, or finds out (spending something like one third of her time in doing so).

It's true she recognizes that the nest is a large one — so much larger than her own would be if she were operating alone; never-the-less, she regards it as an extension brought about by the contributions of her cooperating neighbors. At first, she was a solitary bee, she lived close to her neighbors, and each maintained her private quarters.

Later, by mutual consent, and almost without realizing it, she joined efforts with a few of her close neighbors. But she never surrendered or lost her proprietary feeling of responsibility for the success of the whole nest. She never consciously became a true socialist. Every female worker in the honeybee nest is queen of the hill in her own way of thinking. The other female workers of the nest are helping her make a success of an operation that is merely an extension of her own domain.

This is a rather remarkable state of affairs. It is a remarkable attitude to hold. This does not mean that the individual worker is not cooperative. Over the millenia during which she has lived in colonies with sister workers, the female honeybee has developed a dual personality, has taken on two roles — one, that of an individual, the other, that of a very sympathetic, cooperative member of a social unit.

A Honeybee Can Think

The honeybee of today has become an individual that can make a mental observation, can draw a conclusion from circumstances and stimuli, and fashion a pattern of behavior that suits her needs. She probably does no abstract thinking.

But that the bee thinks, is attested to by her behavior following such an experience as being struck by the movable anthers of an alfalfa flower when she seeks nectar there. After being struck a few times the honeybee learns to avoid entering the alfalfa flower by the normal route. Instead, she approaches the flower from the side and thus avoids the exploding sexual parts.

Another clear-cut example of the bee's responding to a conclusion based on experience and observation rather than being actuated solely by instinct, is her cooperating with other scouts in choosing a new nest site in the wild. She does not insist on her own initial selection. Nor has she become merely a democratic member of a society in which she leaves decisions to others. She makes her own decision either by accepting or rejecting a sister scout's selection.

We are substantially forced to the conclusion that the members of a honeybee colony vary to some degree in ablility. This variance may not be great because the talents of a small insect that lives (during the summer) for only about six weeks cannot be too munificient. But the fact that some individual bees lead while others follow is shown by the roles assumed by scouts for nectar sources, and for new homes, and as breakers on the surface of the cluster when the whole population needs to move. Nor is it illogical to assume that some bees inherit a better mental equipment than others since no two receive an identical combination of genes.

Thinking versus Instinct

The possession of some degree of mental capability by the bee need not amaze us. She is still largely a creature directed by instinct, as is man to a degree that he is scarcely aware of. Much of human performance is accomplished without any mental effort whatsoever.

For example, man thinks about food when he is instinctually made aware of hunger. He mentally chooses his food in response to that instinctual prompting, mentally enjoys its consumption, then leaves its digestion and disposal to instinct.

All of man's life he is torturned by his thinking talents interfering with his spontaneous abilities. Athletes, for example, who try to determine their behavior by thinking too much about a performance that their body has learned to take care of, often commit an error. A baseball shortstop, for example, who starts worrying when a bounder is hit to him often finds that his mental doubting interfers with the performance of his body which is perfectly capable of fielding the ball. This example is not perfect since we have here a learned skill versus one directed by mental powers, rather than pure instinct versus reasoning. A better example would be that of a man who mentally persuades himself that he is hungry when his instinct gives no such prompting.

Another good example of a honeybee's reacting to a mental conclusion is reported in the New York Times about a research project carried on at Cornell University by Willard S. Robinson who set himself to the task of finding why bees do such a poor job of pollinating Delicious apples.

Robinson found that because Delicious apple bloosoms have a slightly different shape from that of many others, the honeybee is able to obtain nectar from the flower without pollinating it. As is generally known, Delicious apple trees often yield only 40-50 percent of their potential. There are meager data which suggest those who have provided more bees secured better crops.

Robinson minutely observed honeybees at work on Delicious apple blossoms over a period of nearly two years. He finally reached the conclusion that honeybees are able to "steal" nectar from these blooms by nosing their way through irregular gaps at the base of the stamens, a structural path that is not present in many other apple blossoms.

The honeybee that follows this method of securing nectar without accomplishing pollination are so-called "side workers". This method of work by the bee, Robinson states, could annually deprive the apple growers of the United States of as many as 20 million bushels of saleable fruit.

Robinson's conclusion is that the bees' inclination to work Delicious blossoms from the side may be circumvented either by using more bees or by planting no more than two rows of Delicious apple trees consecutively. The latter device may discourage the bees from becoming habitual side workers. The first device will produce more workers as yet uninitiated in this way of operating.

I am repeatedly intrigued by statements by authorities in the field of apiculture who seem to apologize for the fact that we do not yet know the answers to many of the problems in our field. What a pity it would be if we did! In that event, what would future apiculture students use as subjects for research and for theses?

Probably most of a honeybee's performance is the consequence of unlearned skills. Take the matter of navigation. when a bee has filled her honey sac with nectar, she rises into the air, then circles several times before heading for home. A recently mated queen probably does likewise before starting her trip back to her nest. Since it may be the one time she does this, she can scarcely depend upon previous learning.

So too with the building of hexagonal cells on the comb rib in the nest. A rather large number of bees may simultaneously work on one cell, each doing a part, and without any evident communication with sister workers. Here again we have a reversion to the behavior that characterized the ancestors of each one of them. Today's bee is a solitary-like creature who is perfectly willing to build a cell cooperatively, but who can do the job alone if given time.

We see instinct prevailing again as the bee gathers nectar or pollen from only one species of flower (as a rule) in a given day. Just why the bee behaves in this way no one has discovered — even if we understand its value in Nature. I'm rather certain the bee does not **think** about it.

A honeybee, as we know, has a sense of timing, as does man. Almost any human can "set" his mental clock when retiring and arise at a given hour without any secondary assistance. During daylight hours humans tend to be assisted in knowing time by means of the sun. Honeybees are likewise guided by the sun, or by polarized light when they cannot see the sun.

Many animals other than honeybees are programmed to observe the passing of time. One of the more interesting instinctual capabilities of many animals is their observing a waiting period after eating a strange food. If the small portion they initially consume does not cause any intestinal discomfort, they will try it again. If they do become sick, even if the true cause lies elsewhere, they will not sample that food again, ever. Unlike kings they need no royal tasters. But observe your own built-in instinctual restrictions. Isn't it true that you seldom indulge too liberally the first time you eat a food you have never previously tasted? I can still recall my having to learn to eat olives.

Recognition of parents by an offspring just born is an interesting phenomenon. I recently read (and saw on television) a portrayal of the experiences of two researchers who salvaged young geese in the arctic that had been abandoned by their parents. The young geese accepted the two human researchers and adopted them as parents. Last summer I fed a young robin that had, at least temporarily, lost its parents. I regretfully stopped feeding it because it wanted to adopt me as its parent. It was at my garden. For three days it hopped noisily to my feet each time I came near.

Recognition of the nest site by every honeybee is an essential that each one of them struggles with. It is only after repeated short orientaion flights that a bee ventures into the fields. Meanwhile she combines instinctual navigation skills with learned details of the environment which combine to steer her home.

Humans, like the honeybees, profit from "joining up" with others. The solitary bee, including the many solitary species of today, tends to build it nest in the vicinity of others. Many other animals do likewise. Many species of fish find greater safety in the company of their

kind. Birds ten to live apart in pairs during the raising of young, but seem to enjoy the companionship of others during the remainder of the year.

So too with humans. we tend to keep by ourselves during the "family hours". We get pleasure and natural satisfaction from being a member of a group frequently. There are few voluntary hermits.

Some people, however, tend to build loyalties only to relatively small units. The Blacks of Africa, for example, tend to confine their loyalty to a tribe rather than to a larger unit such as a nation. That is true today in Zimbabwe, Rhodesia.

Communication Among Honeybees and Among Men

Much of communication among honeybees is by way of pheromones — glandular secretions that are recognized by other bees. The sting odor, or alarm, is one of the most recognized signals. And yet, is this signal an intentional communication: Or is it an accompaniment of an act which other bees have learned to recognize?

When the individual bee protrudes her sting, even part way, she involuntarily releases a small quantity of pheromone from and adjacent gland. Over the years, bees have learned (or instinct has informed them) that when this pheromone is discernible, some other bee has everted her sting. Immediately, some others in the vicinity, especially those that are programmed to a guarding tendency (not all members of a nest are so inclined at certain times in their lives), move toward the source of the pheromone alarm and investigate the cause. If they confirm that there is just reason for alarm, they join in the attack. Here again, they must form a judgment.

Does man produce pheromones? Generally speaking, man likes to think he has outgrown such primitive characteristics. But has he? We know that a certain species of hound can track an individual human that has traveled in the midst of several other humans, if given a chance to sniff a piece of the human's clothing. The only exception to this is that in the case of identical twins the dogs will follow either or both, not distinguishing between them. So we do have individual odors.

Like hive odors, different human homes emit odors that identify them. Today we have largely displaced our need for the possession of pheromone-producing glands by adopting the use of words. What valuable means of communication they are — and how often misused!

We know that a queen honeybee in healthy condition releases queen substances. Humans constantly release a babble of words. Just as Nature is believed to abhor a vacuum, so too man (including woman) abhors silence. It doesn't have to be a very sensible babble. But it must be continuous, or nearly so. I have heard of a restauranteur who finally built a noiseless dining room, one in which conversation could scarcely be heard between tables. He lost all his patrons. Today in many restaurants we have not only the babble of conversation, but music as well — not always tastefully chosen.

Bees do not ordinarily emit much sound in the hive except at times when grieving from loss of their queen prompts them to express their feelings. At such times (as at others) many bees can be seen crossing their antennae. Have you noticed how many individual humans in western society today "cross their antennae"? I refer to embracing and to osculation. In some countries it is as customary among men as a handshake, is here.

Nearly all animals make sounds; we notice birds doing so especially. It's noteworthy to observe the variation in the songs of the mocking bird. In the South he seems to emulate the notes of the cardinal; in the North that of the robin and the thrush; in the Galapogos Islands that of the duck!

Music, however, is our supreme medium of communication. We reveal the quality of our culture by our music selections. Too bad, perhaps, that our spoken language is not so universal. How unforunate that the early songs of civilized man were not recorded. Would the inhabitants of another planet like our music? Do they (if they exist) keep bees? Do they like honey?

Following Good Health Habits

There is a good bit in the field of physical health that we can learn from the bees. We know that they make a constant and diligent effort to keep their homes clean. They are splendid examples to us in this matter.

In terms of freedom from disease they are extremely successful so long as they can keep their collective unit strong in numbers and well supplied with uncontaminated food.

Like us, unfortunately, the bees are victims of contagious diseases — foulbrood, Nosema, sacbrood, chalkbrood, and others. Here again, if the colony is strong numerically, and its members are healthy, an attack by one of these diseases can sometimes be overcome.

As a political society, the honeybee society provides us with an example that should be stimulating. A colony of bees never has to institute a draft in order to secure an army of defenders. Nor do any of its members ever seek relief when an opportunity to take care of its self is present. On the other hand, there is perfect sharing if needed. But it is not too often needed.

Though the individual human who doesn't know much about bees might feel improperly humbled if it is suggested that man can learn from the bees, you and I are aware that we can learn from them, even if it be by the contrasts between their lives and our own.

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Skepmaking—An Ancient Craft Revisited

"It is wise to keep out of sight of family and friends while skep making."

By Ann W. Harman
Laytonsville, Maryland

A STRAW SKEP is an object of fascination: The sides sloping in some elegant mathematical curve, the silky feel of the straw, the earth-gold color reminiscent of beeswax, and the charm of an item handmade.

Intrigued by its appearance and its deceptive simplicity, I decided to construct a straw skep. After all, it is just a simple basket turned upside down. And thus inspired, I began to assemble instructions and materials.

The first material needed brought to mind that marvelous antique recipe that begins "First catch your rabbit..." and leaves you with visions of running about with stewpot in one hand and lid in the other. First, it is necessary to obtain several sheaves of straw. For me this was vastly simpler than rabbits. A neighboring farm grows lovely wheat and the farmer is quite used to my odd requests for bizarre items. When asked for permission to hand-cut several sheaves of wheat, he smiled, nodded assent and volunteered a nice patch of over-fertilized wheat that had grown entirely too tall. He seemed rather glad to get rid of it. Since it stuck up so high it rather marred an otherwise beautifully uniform wheat field.

Author with possibly a sheaf of wheat.

On a warm, sunny afternoon in mid-July the wheat was ready for cutting. Since old paintings show farmers working with big scythes, I put one of those in my large garden cart, then threw in a small sickle just in case, and headed into the field. The large scythe was entirely too much — at least for modern wheat. I quickly discovered that the small sickle was very effective. Cutting and stacking in the cart went very quickly. As I whacked and stacked, I suddenly wondered what passers-by were thinking as they observed me practicing my medieval task. Would the city dweller think it perfectly sensible to cut by hand?

Would a passing farmer think the combine had broken and offer assistance? What would I say if asked what on earth I was doing? Several replies came to mind but I settled for the truth: "I am cutting sheaves of wheat to make a skep". Just try that out on your average man-in-the-street and see where it gets you.

The cart was full. But a large problem presented itself. What is a sheaf? How big is it? Is it an armful? Whose arm? Would my cartful produce one-third of a skep or six skeps? It would be best to check reference books now to be sure to get the right quantity before the combine comes. After an hour with various books, all I learned was that a stack of sheaves is a mow, plus hundreds of fascinating items, such as four pottles make a peck and two hogsheads make a pipe, but these have nothing to do with wheat. And so the cart was refilled and in due time a new quantity could be added to the reference books: Two cartfuls make three skeps.

Freshly cut wheat has two parts: the smooth stem and the top bristly bit with seeds. It is clearly up to the skepmaker to separate the two. One book recommended letting mice do your work for you. But the fear of the mice constructing their usual smelly nest in the clean straw, just to be near the grain, eliminated the idea. The bantam rooster was offered some, and although he eagerly gobbled up the wheat, The task would take approximately forever. A handful was offered, seed-first, to the horses in the hope they could clean-

ly bite off the seed end. This proved to be another endless process but one embellished with squabbles between the two over which horse had the choice mouthful. Precious straw was lost. In the end, the kitchen meat cleaver seemed to be the most successful, with a pair of garden shears a close second choice. The task now takes only slightly less than forever.

The tools needed for skep making are also deceptively simple: A hollow needle and a smooth cylinder. Traditionally the hollow needle would be constructed from a turkey bone or other large bird bone. And in keeping with my tradition, I did not happen to have a turkey bone handy, the more recent ones being buried deep in the compost pile. A quick check of grocery store prices showed that a turkey bone would have to be in the distant future. A sawed-off round curtain rod stuck in a cork was the chosen substitute. Next, an inch-and-a-half diameter cylinder was needed. One set of skep instructions called for a cylinder made from a section of a cow's horn. Well, unlike requesting a sheaf of wheat from a wheat farmer, one cannot go and request a horn from a cattle farmer. Cattle do not wear horns any more. It just is not stylish. A plastic pill bottle with top and bottom cut off formed the cylinder. So much for tradition.

Bramble, peeled and split, was once used to form the finding for skeps. Here tradition will be bypassed again since there is only one time in the year when brambles should be encountered. That is when they are laden with ripe berries and the end result, delicious jelly, is worth the battle. A quick visit to a craft shop produced beautiful binding cane.

If you are thinking of skep-making as a pleasant winter pastime, while sitting by the hearth, a pottle of ale by your side, forget it. Since you need to keep the straw and binding cane damp, you are surrounded by piles of damp straw, wrapped in large, damp, worn-out bedsheets. The dogs, remembering the warm lazy days of summer, come to lie in your straw. The cat, having nothing better to do, pretends to hunt imaginary mice and pounces into your pile of straw. Mice! Suddenly there appear visions of hordes of mice invading the hearth rug in search of overlooked kernels of wheat. No, skep making is best done in the garage on a rainy weekend.

The worst part for a beginner skep maker is the beginning. Fortunately I was able to take the too-large, too-small, misaligned and lumpy beginning rings and hide them amongst the straw in the horses' stalls. The horses kindly pretended not to notice. Then, at last, an acceptable beginning was made and the skep progressed. It is wise to keep out of sight of family and friends while skep making. It seems to produce quite a few dreadful puns and some very silly comments. Surely the old time skep makers weren't called skeptics.

The last straws were tied and there stood the finished skep — a little crooked, a little uneven. Would it have been any better with the polished cow's horn and hollow-bone needle?

Honey Plants

Oaks and Oak Relatives as Nectar Sources

Francis O. Holmes
Henniker, N. H.

The literature of beekeeping contains many references to the visits of honeybees to oak trees, but the question of how many kinds of oak trees actually serve as nectar sources still needs additional evidence from careful observations before it can be answered.

Chestnuts and chinquapins, which are close relatives of oaks, have long been accepted as supplying nectar to honeybees. The evidence for these plants of the genus *Castanea* seems rather trustworthy because very undesirable flavors in honey have been noted by many observers when their bees had been working on them. The honey from the Spanish Chestnut (*Castanea vulgaris* Lam. = C. *sativa* Mill.)was described by Pellet (**American Honey Plants,** p. 89. 1930) as of poor quality. Lovell, in his **Honey Plants Manual** (1966), states that bees collect a strong, bitter honey from chinquapin and use it for brood rearing. Phillips (1947) in his book **Beekeeping** (page 402) describes honey from the Chinquapin (*C. pumila* (L.) Mill.) as having a most unpleasant flavor. Florida Circular 336, entitled "Important Honey Plants of Florida", refers to the Trailing Chinquapin (*C. alniforlia* Nutt.) as conferring a bitter flavor on the resultant honey. The American Chestnut (*C. dentata* (Marsh.) Borkh.) seems to be widely accepted as having supplied nectar to honeybees in the days when this tree was very common; the honey was reported to be dark in color and bitter in flavor (**Gleanings,** 1887, p. 25).

Many oak species have been mentioned as minor sources of nectar, but they lack the unenviable distinction of the *Castanea* species as unfavorably affecting honey flavors. Pellet, in his **American Honey Plants**, page 251 (1930) lists the Post Oak (*Quercus minor* (Marsh.) Sarg.) as a nectar source and quotes H. B. Parks of Texas Agricultural College as finding extrafloral nectaries in this species. In Iowa a "honey flow" from Red Oak (*Q. rubra* L.) is stated to extend from May 5 to 9 (**Honey Plants of Iowa, Iowa, Bulletin No. 7,** 1930, page 112).

In California a surprising number of oak species have been reported as yielding nectar. Among these are the California Live Oak (*Q. agrifolia* Nee), the Tanbark Oak (*Q. densiflora* (Hook. & Arn.)Rehd.), the California Blue Oak (*Q. douglasii* Hook. & Arn.), and the Valley White Oak)(*Q. Lobata* Nee) (pages 987 and 988 of "Honey Plants of California", California Bulletin 217, 1911).

The English Oak (*Q.robur* L.) was reported as a nectar source in 1969 (**Gleanings in Bee Culture** 97 (11):689).

In **Bee World** 54(4):180 (1973), the Cork Oak (*Q. suber* L.) was cited as a source of honeydew honey, rather than of nectar honey, and this honeydew report raises the question whether some or all of the other reports of oak species as sources

of nectar may have appeared falsely in apicultural literature because of inadequate observations.

In view of the possibility that some of the published observations of honeybees working oaks for nectar may have been incorrectly based on hasty observations of bees that were really collecting pollen, honeydew, or water droplets rather than nectar, it would seem highly desirable for beekeepers to watch carefully for the presence of bees on oak trees of all kinds at the flowering time each year, generally in April or May. Any honeybees that may be seen on flowers of the oak trees should be checked carefully to see whether they are in reality visiting aphids that may be present, rather than the flowers themselves. If no aphids are present to furnish honeydew, are the honeybees perhaps merely scrambling for pollen? Or collecting water droplets? Do they really extend their mouthparts to suck nectar from the oak flowers? If they **are** collecting nectar, are they finding substantial quantities of it? In floral nectaries, or in extrafloral nectaries?

Many of our common nectar plants have been studied again and again, and under the most favorable circumstances, so that there is no doubt about their usefulness to honeybees as nectar sources. In contrast to this, observations of honeybees on the flowers of oak trees may have suffered from the great size of some of the trees. The flowers are often far from the ground. This makes it difficult for the observer to follow the activities of the honeybees at close range. More extensive and detailed reports in the bee journals, based on carefully planned observations of many oak species, will eventually remove the stigma of doubt that clouds our present knowledge of this part of the field of "bee botany".

Red oak (*Quercus rubra*).

North Carolina Governor Kisses Royalty

SHIELA SASSER, the 1979-80 North Carolina Honey Queen, receives a kiss from James Hunt, the governor of North Carolina. Ms. Sasser presented the governor with a jar of N.C. honey at the 1979 N.C. State Fair and the governor thanks her with a kiss. Shiela has been travelling throughout the state promoting honey.

One Mans Summer

By THE "OLDTIMER"

JUST RETURNED (27 September) from my annual northern "vacation" accompanied by forty one colonies of honey bees. A similar isolated interlude in some like haven of peace occurs almost every year, so with pot of tea on one hand and log book (in which I enter religiously each day's events) opened to page one on the other, I'll endeaver to condense three and a half months scribbling into two or three pages. I must explain right here that the main reason I elected to go so far this time was to deliver one special blue painted hive and another no less exeptional pink one to two of our grandchildern. A secondary excuse would be that I can never get enough of that beautiful, lonesome country adjacent and including the mighty Coast Range. A lifetime just isn't enough. I see by my notation, June 3, arrived summer bee yard, 30 miles east of my son's place and about 26 miles west of my nearest neighbor, in whose barn I will be storing my surplus honey, (to be picked up later) an hour or two before dawn. I never carry a watch so that will have to suffice. Unloading is rather a simple operation. A plank ramp which I attach in a few short minutes to the back of the truck enables me to wheel each hive off the vehicle to its place on the flat rocky area. Daylight increases rapidly but it will be some time yet before the sun, behind the mountains at my back, rises high enough to flood the valley with its heat. A narrow pass to the southwest affords views of yet more purple fireweed clothed slopes while all about dark green forests and snow clad peaks, some already bathed in sunlight, stand serene, eternal, as it was in the beginning. Anxious to start foraging a few hardy souls leave the warm confines of their home and circle the apiary only to land pulsing on nearby bushes and rocky outcroppings as they endeaver to become aquainted with their new surroundings. It's a grand morning with the promise of a hot day as in shirt sleeves I pick up dry spruce chunks and arrange 3 or 4 suitable rocks to enclose my fire. Next comes a small handfull of bone dry shredded cedar bark covered by a tent of twigs and slivers and while the fire gets under way I'll cut a suitable willow bough on which to hang my tea pail. Bright sunlight strikes the peaks down range and begins its hot progress across the face of eastern slopes toward me. Wild smells surround me as I breakfast of oatmeal, honey and tea. Then I must walk about and welcome old friends — dandelion, plantain, pearly everlasting, fireweed, red, white and yellow clovers, to name a few. All kinds of berry bushes abound on open spaces, trailsides and mixed with alder and willow and roses. Grasses of infinite variety, most of which I know not their names. Mosses, horsetail, ferns. Tall, stately trees. Slopes with familiar scree deposit, boulder strewn creek verges and of course majestic mountains, aloof, timeless, eternally snow capped.

The road (this is a road?) north. Note spikes of fireweed on the left.

Two colonies, the pink and blue, still repose on the truck from which they will forage until (according to my notes) June 5. Pulled out this evening for my son's place about 30 miles further on where I spent several delightful days mostly fishing. Of course, the highlight of this excursion was the ecstasy of delight exhibited by those two little ones the morning of my arrival, when they ran outside. "Oh look, Grandpa brought us some bees, there's mine its pink because I'm a girl, yours is the blue one because you're a boy". Then more exclamations and hand clapping as a cardboard box yielded little coveralls and straw hats with cheese cloth veils and tiny gloves, all lovingly constructed by Grandma. John junior and missus have seven colonies which they winter in the cellar. They also have a cow, four goats, an assortment of chickens and ducks, a dog and three cats. Reading down through the log I come to an inadvertent highlight of my summer. Several pages headed August 6 — early morning, strolled up the road a couple of miles to a triangular alder and willow choked recess in the rugged mountain chain. A spot which caught my eye as I passed earlier this summer as being somehow familiar. I would guess this niche to be not more than ten acres. A fast, turbulent stream hard up against the far side flowed under the road and making this my starting point I walked up its boulder strewn right bank a few yards then turned back. Meandering, I stepped into a clear section containing an old camp fire site. My eyebrows shot up in surprise at its similarity to ones I build so I inspected the fire blackened remains more closely then looked about trying to puzzle it out. Then it dawned on me — of course, that time going to John's place a few years ago I had had some trouble with the old truck and was forced to tarry about a day. So this was an old campfire of mine and those were my axe marks on a near-by

cedar log. Getting my bearings I was now able to walk forward to a grassy spot by the roadside where I had deposited my hives while I worked on the vehicle. Then beside a boulder on a stony section was the crowning proof, a piece of baling wire with the characteristic twisted circles made by my screwdriver when securing hive bodies. Now it may seem strange to some of you but I feel bad about this oversight for I do not like to leave anything foreign to mar the pristine wilderness if I can help it (I make mistakes too you know) but in this case I am very displeased by this witless action of mine and in the future will be even more careful. Sauntering along in a south westerly direction avoiding the underbrush as much as possible, I was just about to turn "homeward" when I came on an extraordinarily wide (about five feet) game trail. In a fever of curiosity over this obviously well used thouroughfare I must therefore investigate more thoroughly so trudging up the steep dusty path, still in morning shadow, I came in a few minutes to the top and a hidden corner which I rounded. If I was surprised at this turn of events I was literally staggered by the next , for the last few steps had carried me into the dark confines of a narrow overarched gorge through which at a distance of about 200 yards I could see blue sky and blazing sunlight. Now all of this including the hidden entrance is unnoticeable from the road since the two walls which form the apex of this triangular indentation blend so well as to seem a cul-de-sac. The little rocky ledge about 5 feet wide on which I now stood overlooked the creek 300 feet

A suitable stick and a tea pail.

Walking through dusky aisles between these forest giants on a thick resilient carpet of needles in a flash I'm back to the beginning of things, a time before man had a chance to spoil it.

sheer below me on my left. Across this abyss and also beside me vertical walls soared out of sight due in part to the presence of hundreds of feet above me of immense granite slabs overhanging the divide and in some cases spanning it completely. Moving on I noted the walls on my right had a blue black lustre changing later to white marble. Overhead, about 200 feet, at one point, two huge trees about 7 feet diameter bridged the chasm so with one thing and another it was doubtful if any sunlight could penetrate its cavernous length. The way was not fairly level so hurrying along I came to a widening of the passage and an almost sudden emergence into open surroundings, hot white sunshine and the most breathtaking landscape scene of wild grandeur. Water rumbled underfoot as it coursed through a natural stone culvert. A waterfall high up on my right leaped from a rocky crevice in a spectacular show of flying spray and rainbow colors disappearing behind a fringe of trees. With so much water there just had to be another outlet. Oblivious to the heat I amble on, my goal being an enormous mountain at the head of the valley. Passing steeply sloping banks of fireweed, small conifers, blueberries and the like I come to a more level stretch where colossal trees in a park-like setting afford a welcome respite on such a hot day. Walking through dusky aisles between these forest giants on a thick resilient carpet of needles in a flash I'm back to the beginning of things, a time before man had a chance to spoil it. A hushed and ethereal atmosphere pervades including even the passage of a little brook which just now flows across my path, silent and crystal clear. I should not be at all surprised under these circumstances were I confronted by my maker, for His presence permeates this hallowed place. Another mile and forest glades give way to steeper slopes of salmon berry bushes, their leaves at least a foot long, interspersed with huge boulders, huckleberries, black-mountain raspberries (of which I eat quantities) and numbers of partridges, apparently unconcerned, scratching in the hot reddish soil. Magnificent views and an ever changing panorama coupled with the wonderful smells of growing things at the height of their season kept me so engrossed that with a start of surprise I perceived long purple shadows slanting across the nearer slopes. A little later shadows overcome and engulf me as out of view behind the mountains, the sun verges toward an unseen horizon until finally only the very highest peaks flame with its rays. Then swiftly even they were snuffed out as first twilight then night steals over the land. A great white moon, its luminous cornona dancing, shimmering, floats between peaks just above tree top level flooding the wilderness with silver to end a perfect day with a marvelous night. Warm and comfortable the Old Timer stirs on his bed of thick moss and as the night deepens, a hidden valley far from civilization, surrounded by awesome peaks eternally snow-capped, slumbers. About mid-morning a mighty granite pile stands before me, towering heavenwards. Overwhelmed and completely unable to anywhere near adequately express on paper this awesome creation it will have to suffice by my saying only, I feel so humble — breathless — so small-y human. The incredible part of this mountain was an immense granite frontal wall thousands of feet high and stretching on each side interminably. On the way up my gaze lifted

many times to the vast regions above this noble feature to feast on glittering snow fields and green forests. Scrambling up a slope of talus I reverently place the palms of my hands on the smooth black surface of this mighty edifice and with a sudden shock fancy I feel the awful power surging up from the bowels of the earth and into a zillion tons of stone mountain. With reluctance I tear myself away from this revered spot and retrace my steps. I calculate this valley to be about 15 miles long. About noon I reach the foot of a boulder strewn almost dry water-course, which ascends very steeply through a wooded section and well up into a flower filled alpine meadow.

Spreading swiftly the fiery glow enveloped icy peaks, the mountains themselves and finally the mountain floor.

Above this, the object of my fascination was a treed saddle-like ridge between peaks where from its heights I thought perhaps I could learn more of this wonderful valley. It looked like a fairly easy climb so without any more ado I begin clambering up this giant's causeway. Struggling, sometimes over but more often around boulders of every conceivable size I come eventually to its end, partway into the most beautiful sun drenched upland pasture it has ever been my pleasure to visit. Knee high in grasses and flowers of every hue a hot primitive fragrance drifts around me as in a state of euphoria I labor another 200 yards to literally haul myself on hands and knees over the top. Panting with exertion and the rarefied air I rest a moment before standing to survey my surroundings. To make a long story short, this moss covered rocky strip is about 100 yards wide at its narrowest point. A sheer to overhanging opposite side gives one the sensation of being suspended in space. Midway, a pool of crystal clear water 50 feet in diameter shaped like a saucer, its sides a perfect round, astounds me. Last winter hard packed snow drifts filled hollows among trees futher up the slopes. One could stay forever absorbing such magnificent views, exploring and philosophizing (man belongs here in the wilderness) but regretably, pockets filled with multicolored stones and bits of fossil wood, I must go. Lowering myself over the edge I begin the descent being greeted again in a few slithering steps by bumblebees with their loud hum, butterflies, birds not the least scared of my presence and a marmot whistling nearby. Just as the sun went down I spied a sandy cavern and decided to spend the night in its sun warmed entrance. Lord of all I survey — a grassy hummock as my throne I settle myself comfortably to enjoy the twilight scenes when lo and behold a most unearthly phenomenon appears, bringing me to my feet in admiration. Beginning with a few tiny clouds high in the east the whole sky in minutes rapidly turned crimson. Spreading swiftly the fiery glow enveloped icy peaks, the mountains themselves and finally the valley floor. It was as if the whole world were bathed in blood. In the hushed atmosphere I stood transfixed with wonder until after what seemed and interminably long time imperceptibly, amethyst appeared to be replaced in turn by every color of the spectrum kaleidoscope fashion finishing with brilliant white light. The heavenly show was over and purple dusk steals across the landscape. I took a deep breath and sat down to ponder. An unseen power I'm convinced, holds sway over this teeming universe, the evidence is all around me in every rock and leaf and feather and drop of life giving water. Space seems boundless to those of us who spend so much time in vast tracts of wilderness, but what of tomorrow and another generation, will they also be able to enjoy all this? I'm afraid to answer that question.

From his heaped up bed of grass and moss, the Old Timer gazes deep into the starlit vastness. Sleepily he thinks I'm alone in the world, nay in the whole universe and a grizzled face breaks into a smile of contentment as one eye closes then unwillingly the other eyelid drops only to pop open again as if reluctant to waste such a night in slumber. However Mother Nature knows best and so a little later when an owl hoots somewhere below in the dark forest the man hears it not, for his dreams have taken him far away to a lofty plateau where he walks and explores in the morning sun.

All the best — the Old Timer.

ABF HONEY SHOW

THE FINEST examples of honey and beeswax will be on display at the HONEY SHOW, held in conjunction with the AMERICAN BEEKEEPING CONVENTION. This convention will be at the HYATT REGENCY HOTEL, DEARBORN, MICHIGAN. Monday, January 21, 1980 — Friday, January 25, 1980.

All beekeepers are invited to join in the competition. The silver trophies will be awarded to winners in each of the following categories:

A — Water White Honey
B — Extra White Honey
C — White Honey
D — Extra Light Amber Honey
E — Light Amber Honey
F — Amber Honey
G — Comb Honey
H — Chunk Honey
I — Creamed Honey
J — Beeswax — Crude
K — Beeswax, Sun Bleached
L — Round Comb Honey
M — Best in Show

There will be an entry fee of $1.00 for each category. All entries must be the product of the beekeepers entering them.

Exhibitors should submit four 1 — pound jars of honey for each category entered, or four chunk, four round, or four comb honey, or a 5-pound block of beeswax in the beeswax category.

Each exhibitor should send or bring four of their own labels to identify the areas and floral sources, for each category, to be put on after the honey is judged.

Exhibts carried to the convention must be presented to the HONEY SHOW COMMITTEE before 9 a.m. Tuesday, January 22, 1980. Entry blanks and all fees must be mailed by January 10, 1980 to:

Mr. Merritt Marshall
50500 Pontiac Trail
Wixon, Michigan 48096

Entry blanks are available from above address.

Shipping Suggestions:
United Parcel Service is preferred. If mailed by parcel post allow plenty of time.
Pack exhibit extra well. Suggest double boxing.
Clearly mark on the outside HANDLE WITH CARE. Put name and address of Merritt Marshall both inside and outside of package. Do the same with your own. Include packing list with exhibit.

Beehive Assembley Particulars

By STEPHEN BURT
Roseville, MI

Beehive assembly is a subject as personal and characteristic as one's signature. In fact, the particular methods a beekeeper uses to construct and finish his or her pieces of equipment do leave a signature of sorts upon that equipment. Although there are often numerous ways of doing the same things in beekeeping, too many beginners, not to mention more experienced hands, do not assemble hives and hive furniture to best advantage. A source of the problem is that assembly instructions furnished with the equipment, if any, are often scant in detail. The following discussion is aimed at explaining precisely how to assemble and finish basic parts of a beehive, with optimum strength and accuracy. My intent, though, is only suggestive. Each beekeeper will soon enough develop his own notions about beehive assembly.

"My observations of beehives assembled by both beginners and established beekeepers lead me to the conclusion that a comprehensive discussion on hive assembly might be of value to many beekeepers."

Hive Bodies, Tops, and Bottoms

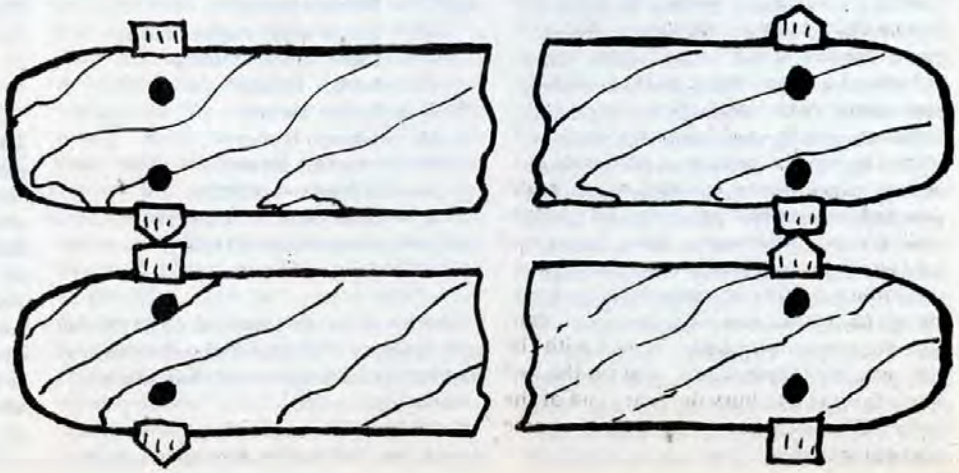
Hive bodies, tops, and bottoms, should be assembled prior to the frames, giving the latter a place of safe storage during assembly. In a typical lockcornerd super, or hive body, glue every interlocking surface on the corner prior to nailing. Resin glues or super-strength carpenter glues are all satisfactory. The nails function to clamp the pieces together, but the glue will provide a major portion of the working strength once it sets. Avoid instant or "super" glues that give instantaneous grab, as they could attach before the pieces have been properly aligned. Additional glue can be brushed into the lockcorners after nailing to seal the crevices which always seem to remain. Use of a corner clamp, such as is used for picture framing, takes but little extra time while insuring that each corner nails up perfectly square. A superior nail, if available, is the number seven galvanized box nail, combining grab and rust resistance. Care in gluing and nailing the bottom and inner and outer covers is at least as important as care in super construction, given the year-round exposure to moisture that the roof and floor of a hive must endure. Instructions for assembling these basic parts of the hive are usually adequate, and the work itself is none too complex in any case. The one serious error possible to make in super assembly is reversing one of the sides of a hive body, thereby nailing the hand hold to face the inside of the hive. The only recourse one would have after such a mishap, short of sawing the lockcorners, would be to fill the handhold with wood filler and improvise a protruding handle on the outside of the hive.

Frame Assembly

Quality frame assembly is more involved than assembling supers. Sloppily made frames add considerable difficulty to hive manipulation and tend to suffer more breakage than strong, accurately made ones. During frame assembly use glue to anchor the end bars to the top and bottom. It is fairly orthodox to nail the top bar down to the end bars with the pointed edge of the end bar frame spacer facing counterclockwise, or "pointed right up." When all frames in a super are so assembled, and one frame can be rotated end to end or exchanged for any other, yet the frame spacers continually align with a pointed surface touching a flat. After nailing down the top bars with nails of at least one and a quarter inch, turn the entire thing upside down, and nail down the bottom bar or bars with nails of at least one inch. If the manufacturer does not provide long nails, procure them rather than using very short nails. Consider nailing the bottom bars to protrude the tiniest hair fraction beyond the end bars to toe the sides of the frame inward very slightly, as this does away with having a frame propolized to the wall of the hive by the bees. Place the finished frame inside an empty hive body and check for shape and hang. If the bottom is biased toward the front or rear of the hive, gently bend the frame with the hands before the glue has set. If the frame cants to one side while hanging, check to see that the top bar has been completely nailed down, and plane or whittle slightly if necessary. Accuracy in frame assembly is slightly more bother than carelessly flinging the equipment together, but is well worth the trouble. Crudely made frames are rapidly pasted to the walls of the hive and often joined to one another by the bees. Such frames are a chore to withdraw, and trying to do so will predictably lead to irritation of the colony.

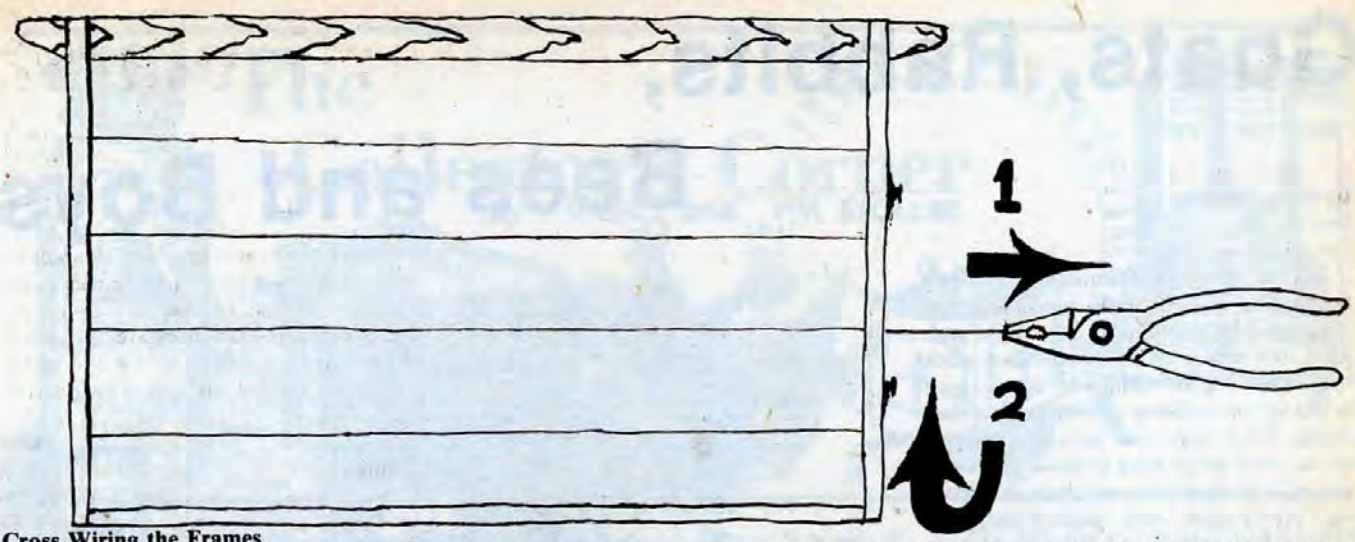
Cross Wiring the Frames

Perhaps no aspect of equipment



End Bar Orientation

If the end bars are attached with the beveled edge of the frame spacer counterclockwise, or "pointed right up," and one frame can be rotated end to end or exchanged with any other, yet the frame spacers continually align with a pointed surface touching a flat.



Cross Wiring the Frames

Wires are installed a pair at a time. A deep frame needs to be wired twice. Grasp the wire with a pair of pliers , pull until a pleasant, musical tone is heard, and wind it tightly about the nail. In this example, the first and second wire are a distinct pair, and the third and fourth wire become a second pair, each pair attached to its own nail.

assembly bedevils the beginner more than that first attempt to cross wire a frame. Sadly, too, many new beekeepers never make that first attempt, and pay dearly ever after with inferior comb. Although plastic foundation and plastic frame-foundation combinations exist, which do not require cross wiring, the workhorse foundation for brood and extracting combs remains pure beeswax, usually with vertical reinforcement wires, installed in a cross wired frame. Cross wiring a frame demands a degree of patience, but;is easy to do if one works unhurridly. Since a shallow frame requires two wires while a deep needs four, I wire frames two strands at a time, using the same process two distinct times for a deep. Most beekeepers, however, wire the whole frame at one time. The technique I use is as follows. After inserting frame eyelets with an eyelet tool or Phillips screwdriver, drive a one inch nail between the eyelet pair leaving an eighth inch or so for attachment of the wire. Eyelets and nail should be on the external side of the frame, with eyelets in both end bars. Holes in the end bars should be provided for the wiring process, however, be prepared to drill your own if the manufacturer forgets some or misaligns a few. Weave the frame wire in a circuit back and forth once through the frame and wind an inch of wire about the nail. After clipping the other end from the spool with a few inches extra for attachment, grasp the end with a pair of pliers and firmly pull the wire until each strand develops a pleasant, musical tone when plucked. Without relaxing the tension, wind a few turns about the nail with the pliers, turn the remaining wire onto the nail with the fingers, and crimp down hard on the nail with the pliers to bury the sharp end of the wire. IF all winding is done in the same direction, either clockwise or counterclockwise, the final hard turns with the pliers will further snug the wires in the frame. **A note of caution: Whenever working with frame wire always keep the work away from the face and eyes, as frame wire can be remarkably jagged when broken.**

Installing Foundation

Installing foundation concludes frame assembly. Considering the delicacy of foundation, refraining from installing the wax until actually necessary is a prudent course. Although frames with solid bottom bars have a small but devoted following and some cut comb producers opt for divided top bars for quick foundation insertion, the standard frame in widest general use has a thick, solid top bar with removable wedge and divided bottom bar. Due to the added strength of securing the foundation at the top and bottom of the frame and to the wide availability of divided bottom bar frames, they are probably the best choice for beginners for all purposes. The following discussion pertains to installing foundation in a divided bottom bar frame, although other styles differ only slightly in method. After removing the wedge from the top bar, start the foundation down between the bottom bars a corner at a time. **(Editors Note: An optional method is to leave one of the bottom bars off until the foundation is in place, then insert and nail the second bottom bar. The bottom bar left to last should be on the same side of the frame as the wedge strip.)** Straighten the sheet, turn the frame so that it rests with the top bar down and the foundation touching the recessed corner where the wedge was removed. Nail the wedge back down from whence it came, now firmly pressed against the entire length of foundation. If properly done, a quarter inch of foundation will be tightly sandwiched between the wedge and the opposing side of the top bar. Reinforced foundation with vertical support wires is installed with the hooks at the top end positioned directly under the wedge. If the foundation is of cut comb design or a plastic core variety, installation of support pins in the end bars to further secure the sheet completes the job.

Embedding Foundation

As mentioned, pure beeswax foundation intended for brood or extracting combs should be installed in a cross wired frame. Embedding beeswax foundation is definitely worth the bother, given the proven record of acceptance of beeswax foundation by the bees, its relatively low cost, and the ease of removing and rendering pure beeswax comb when necessary. Happily, foundation is easy to embed. The spur embedder, an inexpensive toothed wheel on a handle, is perfectly adequate for the beginner or small scale beekeeper. Embedding must be done on an elevated surface within the outline of the frame. One can cut a board to the inside dimensions of a frame. I use a bread pan turned upside down, which works satisfactorily. Place the spur embedder in a pan of boiling water. Lay the frame with the wires upward on the raised surface. Begin to embed with the center of the top wire and work outward in each direction. Then proceed downward a wire at a time in the same fashion. This procedure works any waves or buckles downward and outward, leaving a perfectly flat foundation suspended on the wires. Use of the heated spur embedder is simplicity itself. Merely walk it down the wire with a firm, steady gait, allowing the combination of heat and pressure to plant the wire right into the wax. The process can be speeded

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Goats, Rabbits, Bees and Boys

By Elsie Evelsizer
Forrest, Ill.

MY HUSBAND, Dennis, and I began beekeeping in 1970 when we bought our 2½ acre homestead. The boys were toddlers then and grew up watching us work bees. We began with two hives, used primarily to pollinate our dwarf fruit orchard. Since then bees have become one of our most fascinating projects. After we started I learned from relatives that both my grandfather and great-grandfather (Anton Sparenberg and Oren Karr) kept bees many years ago.

Last year we gave each of the boys a veil, bee gloves, and a hive tool and encouraged them to become familiar with the procedures of handling bees. They got along very well and seemed to enjoy it so this year we allowed them to take Beginning Beekeeping as a 4-H project. Theirs is the only beekeeping project in Livingston County. In addition to the bees, this was their second year raising purebred Saanen dairy goats and Jason's doe, Jill, was named Grand Champion. Joel was a member of the county dairy judging team and Jason was alternate.

The Evelsizer Farm

The boys each exhibited three plastic boxes of cut-comb honey at the county fair for which they each received a blue ribbon. The three times they gave their demonstration on "The Parts of the Beehive" they had very attentive audiences as this was completely new information for most people (local club, Livingston Co. 4-H Fair. Illinois State Fair). Dennis is leader of the Pleasant Ridge Boys' 4-H and he hopes this will perhaps spark some interest in beekeeping.

Joel putting in foundation for his cut comb honey.

We live on prime farmland, good black loam, with very intensive production of corn and soybeans. Hybrids have eliminated many of the weeds and wildflowers that once served as nectar source. On our 2½ acres we depend on dandelions and Dutch white clover for build-up and our honey crop is primarily soybean which is well liked by our customers.

Joel almost didn't have a crop at all. The boys each received a package of bees and installed them April 14th. When we checked them April 19th Joel's queen and her attendants were dead in the mailing cage. I immediately ordered a new queen which didn't arrive until May 21. By this time Joel had laying workers. All our bees died last winter so we were starting over completely with package bees. Our own bees arrived after those of the boys so we had no frames of eggs and brood to loan Joel's bees to enable them to raise their own queen. I checked the literature on

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The Collector's Corner

by DARL and IVA STOLLER

ONE OF THE most interesting hobbies in our country today is the collecting of salt and pepper shakers. Most of them are inexpensive, they take up limited space and the variety available is almost unlimited.

A friend of ours has over 1,000 sets in her collection and it was almost unbelievable to see the many and varied items she has found. We, of course, were very interested in what she had pertaining to bees. We found about ten different sets and they were all different from any we had found.

The set we have displayed in the picture are very colorful and the colors range from black to many shades of gold, to several that are almost white. Only a few sets are new, as we have been able to find a very limited amount of new bee items in gift shops today.

Many of them were made in Japan, as the honeybee seems to have been a favorite subject for them, and most of them were very nicely done. Several of the sets were given away at National meetings and they are especially treasured by us.

The most valuable set, and one that is very rare is the set on the lower right, made of milk glass. These were made in the middle 1800's and today are worth approximately seventy five dollars.

The most unusual set is the last one, on the right side of the top row. The salt was put in the bottom part of the set and the pepper in the top. The lower shaker in the front is lacking the bottom part where the salt was put but the one in the back, the taller one is complete. They are beautifully done and made by the Maritake company in Japan, the same company that makes such beautiful china you see in our finest stores.

The two plates are both hand painted and very colorful. The one on the left has three bees in flight, approaching some clover blossoms. The artist painted the plate on the right in 1894 and has three bees plus a butterfly in an interesting pattern on the plate.

Don't forget the American Beekeeping Federation meeting in Dearborn, Michigan the last part of January. There are always some displays of interesting jewelery for sale along with various other items for the beekeeper who delights in collecting the bee items that are availble. The best part of all is just meeting the many wonderful people who make our industry so interesting and compare notes with the many collectors we have of the honeybee.

We hope to see you there. Happy collecting.

Strictly Backlot

Carl Callenbach
135 College Avenue
Elizabethtown, PA 17022

Honeybees and their honey keep popping up in all sorts of literature — ancient and present — and in all kinds of contexts. The sampling of quotations which follows attests, for example, to the therapeutic value of honey and honeybees, both nutritional and avocational. The excerpts speak to ecological issues and use some behaviors of honeybees as an analogy, a model worthy of study by those interested in human deportment. And there's a bit of humor here and there. I've sprinkled in a bit of my own to give, I hope, this particular potpourri a **bit** of whacky flavor:

The pedigree of honey
Does not concern the bee;
A clover, anytime, to him
Is aristocracy.

Emily Dickinson. ***Poems***

Bees work for man, and yet they never bruise
Their Master's flower, but leave it having done,
As fair as ever and as fit to use;
So both the flower doth stay and honey run.

Herbert. ***The Church***

In the nice bee, what sense so subtly true
From pois'nous herbs extracts the healing dew.

Pope. ***Essays on Man***

Nature's confectioner, the bee.

John Cleveland. ***Fuscara***

The bee is more honored than other animals, not because she labors, but because she labors for others.

St. John Chripostom. Homily

I thought I'd buy me a thousand or so hives and make a fortune.

Jason Schmidt. (Tape recorded at the Clinton County Poorhouse.)

And his meat was locusts and wild honey.

The Gospel According to St. Mathew 3:4

While Honey lies in Every Flower, no doubt,
It takes a Bee to get the Honey out.

Arthur Guiternan. ***A Poet's Proverbs***

That which is not good for the swarm, neither is it good for the bee.

Narcus Aurelius. ***Meditation***

The bee is small among flying things, but her fruit hath the chiefest sweetness.

Apocrypha. ***Ecclesiasticus***

More Flies are taken with a Drop of Honey than a Tun of Vinegar.

William Hone. ***Table Book***

For a foolproof swarm prevention method just send $1.78 and three Captain Bootsie's Sugar Daddies boxtops to . . .

von Meullen. ***Beekeeping Nightmares and Other Horses of Different Colors***

He has a bee in his bonnet.

Proverb

Strange how often they speak to you of bees. The order and sweetness of a hive seem to have made a great impression on the Russians of this age. Again and again in Tiflis people talked of bees with a sort of wistful affection, as if the cool pungence of bees were a tonic to them in the midst of the soggy bleeding chaos of civil war and revolution.

John Dos Passos. ***Orient Express***

Who in his pocket hath no money,
In his mouth he must have honey.

Rowland Wathis. ***Flamma Sine Furmo***

The best oil is on the top; the best wine in the middle; and the best honey is on the bottom.

Thomas Fuller. ***Worthies of England***

Take your rinky-dink extractor, the supers, and all your other lousy bee equipment and get it out of the kitchen!

Ida Sherry. (Heard two miles up the road from the Sherry residence by and innocent bystander and presented as State's evidence at the murder trial of Harry A. Sherry.)

The Owl and the Pussy-cat went to sea
In a beautiful pea-green boat,
They took some honey, and plenty of money,
Wrapped up in a five-pound note.

Edward Lear. ***The Owl and the Pussy Cat***

One who marries an ill-tempered person attempts to lick honey off a thorn.

William Hone. ***Table Book***

A fool and his honey are soon started.

A Parody of you-know-what.

MANITOBA BEEKEEPERS COMPENSATED

IN AN ATTEMPT to prevent bear damage to hive equipment the Manitoba Department of Agriculture has entered into a cost-sharing program with Manitoba beekeepers for the construction of electric bear fences around apiaries. The Department of Agriculture is offering a $100.00 rebate for each fence constructed up to a maximum of 10 fences per beekeeper. In order to be eligible for the $100.00 rebate the bear fences must be built to Department of Agriculture specifications.

TESTING UNCAPPED HONEY IN COMB

A simple test to determine if uncapped honey, often found at season's end, is sufficiently "ripened" to remove for extracting is to shake the combs. If droplets fly out it is not yet ready to remove. If, however, nothing happens the probability is that the honey is ready to remove, though uncapped, at season's end. This test is not a reliable guide except at season's end. During the main extracting season all honey should be at least three quarters capped over before being removed from the hive.

Siftings

By CHARLES MRAZ
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Middlebury, VT 05753

THE NORTH AMERICAN Apiotherapy Society had its annual meeting November 10, 1979. It was one of the most interesting and successful meetings to date. I have already spoken about this organization in Siftings; its purpose is to promote research and information on the theraputic activity of the various bee products. Our main field of research has been the use of bee venom for the treatment of rheumatic and other degenerative diseases.

Proceedings of our previous meeting will soon be available in a limited number. Members of the Society will have first priority at a cost of $7.50, nonmembers, $10.00. The annual dues are $10.00 per year and membership is available from the secretary: Harry E. Froehlich, 1201 Georgetown Drive, Bel Air, Maryland 21014.

As a result of this publicity on bee venom therapy in articles, radio, television and other mediums, a great deal of interest has been generated. I have received letters and phone calls from a number of beekeepers with friends and relatives suffering from rheumatic diseases. They have been treating them with their bees, apparently most of them with excellent results. It is indeed encouraging to hear reports of how much it has helped these arthritis victims. Perhaps with more publicity and more encouragement, more beekeepers will take it on themselves to try bee venom therapy to relieve the suffering of members of their family and friends. There is nothing that an arthritic can appreciate more than to feel well and live again without pain and suffering.

I have reprints of various papers on this subject I can send to those interested. It would be helpful to include a dollar to help pay for postage and printing when you send for them. Also, there is a book out now on the subject, **Bees Don't Get Arthritis**, by Fred Malone. It contains very good information on the subject.

Another bee product getting "big play" at the moment is propolis. At the Apimondia Meeting in Moscow, 1971, there were many papers on the subject of propolis that were most interesting. Its uses cover the field of dermatology, respiratory diseases, and healing. It has been used in boiling water as an inhalant of coughs, etc., as an ointment dissolved in various fats and waxes, as a tincture dissolved in alcohol, and even chewing "as is" like chewing gum for colds, sore throat, etc. It seems to have bactericidal and fungicidal properties. To me, it would seem its fungicidal activity would be most interesting as there are so few "medicines" for fungus infections that are harmless, non-toxic and without bad side effects, like those of mercury and other potent compounds. Far as we know, propolis is a harmless natural product, and if it is actively effective on fungus infections, it would be a valuable theraputic agent indeed. More research will be needed to prove, this, although many years of research in Europe indicate that this is a fact. To what extent and on what type of fungi remains to be seen.

There is an advertisement now that I have seen to buy propolis at something like $2.00 to $4.00 per pound. I can hardly believe that any beekeeper can collect propolis with any degree of purity at such a low price. On the retail level I have heard of ridiculously high prices for propolis at several dollars per gram, about 1/10th of an ounce. Quite a price spread, from many dollars per ounce to $2.00 to $4.00 per pound. There should be a happy medium somewhere here.

There is no question, the theraputic activity of propolis from different areas of the country can be drastically different. This would depend on what type of plants and trees the bees collect the propolis from; some may be worthless. For example, in some areas of tropical countries such as Mexico, propolis apparently is very scarce for the bees and they will even collect asphalt from the asphalt-paved roads. So there can be a difference, which is very important.

On page 586 of November **Gleanings** is an article by Joe Traynor, "Pesticides and the Beekeeper". In a true and false test, I am afraid Mr. Traynor's statements can be questioned. I have lived with bees and pesticides in the apple orchards of Vermont for some 50 years through the whole development of insecticides, from lime-sulfur and lead to the present high-powered concoctions. It is true that at the present time the insecticide industry is more considerate than they used to be, say, 30 years ago. At that time, any entomologist employed in any state or Federal Agency or University could not breathe a word against chemical insecticides, or he would be fired in no time flat. Also, such entomologists could not promote nor even suggest biological or alternate control methods for insect pests, or they would be called "on the carpet", disciplined and fired, if necessary, to "protect the industry". No one can tell me this is not true, I have seen it happen too many times. Even Jim Hambleton, head of the beekeeping laboratory in those days was called on the carpet for making a statement to the effect that it was safer to eat and apple that might have a worm in it than an apple covered with spray poison.

In those days, if we tried to have a meeting on pesticides among beekeepers, we were invaded with all sorts of "poison peddling", entomologists. They practically took over the meetings from us. I am sure some beekeepers today may remember those days.

In Mexico the cotton growing industry is practically ruined by "chemical farming"; production is way down and only now do entomologists have a free hand to develop alternate, biological and non-toxic methods of pest control. This has come about only because even the most ardent pesticide advocate has finally come to realize that no chemical industry can beat Mother Nature at her own game.

Just last winter we visited a farm in Hawaii that used to grow pineapples. The grower told us that the pineapple worm has now become so immune to insecticides that nothing will control them any more. He was experimenting with growing alfalfa, with excellent results; 12 crops per year of beautiful alfalfa. Checking over the plants I could see a lot of lady bugs, no doubt giving the aphids a going over. The grower told us the "poison peddlar" was at his door almost every week, trying to sell him insecticides to spray his alfalfa. Obviously not to kill any insect pests — there weren't any — but perhaps to kill those lady bugs. Then the grower knew he would have an insect problem; a twelve month per year battle with aphids.

Where did the idea ever come from that encapsulated insecticides are "safer"? How are we defining safer? Does it mean that encapsulated insecticides in the lungs or in the stomach of a human being is harmless? It is just as deadly as it ever was, the only difference is that it may take a little longer to kill you. There is no question that if only 10% of the money now used for insecticides research were used in biological and alternate methods of insect control, the use of toxic insecticides could be cut down to almost nothing. However, that will not be done for a long time to come. Biological control has a very serious drawback; there is no money in it. And if there is no money in it, then hell will freeze before any money is spent on it to do any research.

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BEE TALK-----

By DR. RICHARD TAYLOR
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Trumansburg, NY 14886

MY NOVEMBER "BEE TALK" produced an avalanche of mail. That is the one where I talked about comb honey beekeeping. It seems to have touched a nerve, somewhat to my surprise. So this time I'm going to say some more about raising comb honey, and start trying to answer some of the questions that come up in these letters.

Some bee books give the impression that comb honey beekeeping is a highly specialized art, requiring special management systems and lots of extra work. Well, that is not true in my experience. You can produce good crops of comb honey in about the same way you would extracted honey, by just putting comb honey supers on your hives instead of extracting supers. There are a few extra manipulations you can do, if you have time, but they are hardly necessary. In fact you can go in for all sorts of special shook swarm systems and two-queen colonies, aiming for really spectacular results, if you want to. I've described some of these in my book about raising comb honey. But the point is, you don't **have** to go in for all that, any more than you do in producing extracted honey. I raised a very large comb honey crop last summer, without any special manipulations at all (and I lost only one swarm, too). The secret is the use of round sections, not special systems. I have even seen a book which advocated, along with lots of complex and laborious manipulations, waiting until **after** the main honey flow has started before putting on any comb honey supers! And that, I will bet, is a dandy way of getting a good crop of swarms and mighty little comb honey.

There are, however, certain basic principles, most of them just principles of good beekeeping, that have special importance in getting comb honey. The main one is having only strong colonies, With extracted honey you can get away with supering a weak colony, and the worst that will happen will be a small crop from that colony. But half-filled comb honey sections are worth less than nothing. They are a headache.

Another principle to follow is to get your entire comb honey crop from the summer flows, letting the bees have all the fall honey for their winter stores. There are several reasons for this, besides the obvious one of avoiding half-filled sections. You get your work finished up before the cold weather for one. I always pity the occasional beekeeper I see out there taking off supers in November, and hauling them back to a cold honey house for tiresome days of extracting. You never need to do that if you are just into comb honey. Also, you want to get your comb honey crop sold, as much as possible, before winter sets in. Summer is when people want to buy comb honey, and besides, you avoid the problem of granulation.

Of course nothing is perfect. I end up in the fall with a few comb honey supers still on the hives. These are the supers into which I have gathered all the unfinished sections. The bees get most of them finished up. The few they don't finish I use the next year for bait sections.

Some beekeepers feel that they are losing good honey by not harvesting a fall crop. I used to think that way. But that isn't so. If you let the bees have **all** the fall crop — which means, goldenrod and aster where I live — then you will almost never have a winter loss. And more important, that honey that stays in the hive will be turned into bees the next spring, thereby satisfying the basic requirement of having strong colonies. The heavier a colony is in the fall, the stronger it is going to be in the spring. And it is all those extra bees in the spring that are going to give you your big crop of comb honey from the summer flows. That is the principle of beekeeping most often ignored by beginners. Besides this, you will never have to feed the bees sugar syrup — which is just another needless manipulation, adding to the work and overhead expense of beekeeping without any commensurate return. I learned all this from Charles Mraz, and I only regret that I didn't learn it sooner.

Keep things **simple**, and make every motion count. What you are trying to do is produce as much comb honey as you can with the minimum expenditure of work and overhead. Or at least, that is what I try to do. Now of course it is fun to feel around sometimes with a lot of fancy systems, and get from one colony as much honey as you would normally get from two. It gives you something to boast about and take pictures of. There's

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From "The Beekeeper's Record & Journal," illust. Cindy Diamond. Linden Books, Interlaken, N.Y.

Research Review

By Dr. Roger A. Morse
Research Editor of Gleanings
Professor of Apiculture
Cornell University, Ithaca, NY

What Makes A Queen A Queen

CONTRARY TO EVERYTHING which has been written and said, a four and one half day old worker larva can still be transformed into a queen if a special substance, called Juvenile Hormone I, is added to the larval food. What makes a queen is in large part apparently the quantity of food the larva consumes.

The paper cited below shows clearly that royal jelly does not contain a special "queen determination" substance. It appears most likely that an internal glandular system dictates when worker larvae should stop taking food. The Juvenile Hormone I turns off this system (an endocrine gland) causing the larva to consume more, and therefore develop into a queen.

These experiments were undertaken in the laboratory under precisely controlled conditions. While all this does not tell us how to grow better queens, it does point our research in that direction and brings that goal a little closer.

Dietz, A., H. R. Hermann, and M. S. Blum
The role of exogenous JH I, JH III, and anti-JH (precocene II) on queen induction of 4.5-day-old worker honey bee larvae. **Journal of Insect Physiology** 25:503-512,1979.

Bees and Their Queen

YOUNG WORKER BEES, those three to nine days old, appear to have a special attraction to their queen; they are noticed "attending" her, touching her with antennae and/or mouthparts. They usually remain in contact with her for more than thirty seconds. A recent study has shown that their behavior during the next thirty minutes or so is different from workers who have not been in contact with their queen. Bees fresh from a session with the queen walk more rapidly about the hive, antennate (touch antennae) with nestmates, more often receive a greater number of inspections from their hivemates and perform less work. After a while they return to their normal routine.

The fact that workers which have contacted their queen behave differently leads to the conclusion that they receive something from her (queen substance) and they, in turn, distribute this material or somehow give other bees in a hive the message that a queen is present. Within ten hours after a queen is removed, a colony of bees loses its inhibition against rearing a new queen; workers potentially involved in queen raising must always be receiving fresh information on the status of the queen. However, the queen comes in contact with only a small percentage of bees in ten hours. Thus, it is logical to assume that there is some method of spreading the "word" about queenrightness. Whereas, we had suspected such a mechanism was operating within the hive this is the first time precise data on the subject has been presented.

It now appears positive that these young bees do not seek out their queen but come upon her almost accidentally. There are no special bees which carry messages around the hive.

Worker bees which had been in contact with their queen were examined chemically but no more queen substance could be detected on them than on workers which had not been near the queen. Whereas the chemical apparatus used in such an examination is sophisticated, it is still not good enough to cope with the very small amounts of substance the workers are distributing, if indeed, anything is being distributed. It is remotely possible that it is the worker's behavior alone which conveys the message.

Seeley, T. D.
Queen substance dispersal by messenger workers in honeybee colonies. **Behavioral Ecology and Sociolbiology** 5:391-415. 1979.

Plans for a Solar Wax Extractor

PLANS FOR A homemade solar wax extractor are available at no charge by writing to Dr. Clarence Collison (Penn State University, 106 Patterson Bldg., University Park, Penn. 16802).

The plans available from Penn State were developed by the late Professor E. J. Anderson who researched the subject thoroughly. We have been more than satisfied with the extractor which we built using his dimensions. During the course of a summer season we have recovered a large quantity of clean wax.

An Anderson-Penn State, homemade solar wax extractor with the top temporarily removed. For best results the inside of the extractor is painted white and the outside, black.

Fundamentals for All

W. A. Stephen
Professor Emeritus
The Ohio State University

"A couple of Ups Before Final Downs"

In the September **Gleanings** I told of the condition of the colonies in my bee yard at the end of June. It has been a year of ups and downs, unfortunately not many ups. During the mid two weeks in May some nectar came in. About that time, the bee inspector checked my colonies for disease (he found none) and reported that mine was the only apiary in the county that had any honey on the colonies. There was not much, but the bees had filled in the empty spaces around the brood in the top frames of my two-story colonies and had 15 to 20 pounds of honey in the shallow supers. I reversed the brood chambers on May 9. May terminated the first up.

June was unprosperous, as far as the bees were concerned. Work done at the Bee Breeding and Stock Center, Baton Rouge, La., indicates that surplus comb storage space stimulates nectar collecting. My colonies sat there with storage space for 70 to 100 pounds of honey, during which time the bees used up some of the honey in the supers. That was the first down.

I did not see my bees during July. Why should I? The swarming season was past; there was ample room for honey storage and reports from other beekeepers didn't indicate an urgency for a visit.

My notes record that on Aug. 1 the upper brood chambers were quite heavy, but there was little honey in the supers. I have been able to avoid fall and spring feeding by reversing the brood chambers when I find them in this condition. I put the heavy brood chamber on the bottom and the empty one above it, under the queen excluder. Some nectar was coming in — promise of a second up.

Well, that second up was not very high, but in mid-August I removed one shallow super from each colony, leaving all with one, or two empties, or partially-filled supers. That proved to be the limit of up for the year — a 25-pound per colony production.

After Beth and I returned from Greece in mid-October, I removed the shallow supers which had been returned for cleaning after extracting the honey from them. I had had visions of another up and had left my extracting equipment set up, just in case. It wasn't needed. There was no more surplus. In fact, there was very little unsealed honey in the supers. This meant that no nectar had been coming in for some time and all unsealed honey had been carried down to the brood combs. Since colonies are cutting down drastically on brood rearing during October, especially if there is no nectar flow, there are many empty cells in and around the brood nest. I, therefore, removed the queen excluders; put the inner covers with escape holes open, in their place and set on the partially-filled supers. I raked the cappings with my hive tool, so that the bees would empty these combs. (I had a capping scratcher, or scraper, at home. It is designed to use on cappings missed by power knives during extracting, but it works perfectly well for scoring cappings so that bees will clean out the combs.) This will be a down for the honey, as far as it is concerned. It also signifies the last down for the bees — their last chance to score in 1979.

I was surprised next day when I returned to remove additional dry supers to find that all colonies had cleaned out the cells where the cappings had been broken. Where a capping had not been broken, the bees for the time being, had left it alone. I hastily broke these and, when the weather cools off and I return to clear off the last supers, the combs will be dry. My double brood chambers now are heavy and the additional honey from the supers will help to put them in good condition for winter. A couple of days of Indian summer may result in additional stores, since the asters are still in bloom.

I put in entrance reducers on my last trip. Next time, after removing the shallow supers, I shall put shingle strips underneath the inner covers, raising them at the front so that there is at least six square inches of opening at the top of the hive. This is protected by the telescoping outer cover and is absolutely necessary for the removal of moisture—"the breath of the bees" as Langstroth called it, during the coming months. Some beekeepers think that auger holes in the fronts of the brood chambers serve as upper entrances for ventilation. It doesn't work with me. When removing my empty supers recently, I found water on the inner and outer covers of several hives and, in one case, a tablespoonful, or more, ran off when I tipped up the cover, and I now have auger holes below the hand hold in all my brood chambers.

Incidentally, I did not turn my black-painted fronts to the rear this summer, as I had suggested in an earlier Fundamentals, might be done. This was not a particularly hot summer here and I found no particular reason for the extra work.

In North Carolina, the farmers spoke of "laying by" their corn when they had given it the last cultivation and application of fertilizer. There is something very satisfying in knowing that you have done your part well and that it is up to Nature to carry on from there. Proper preparation for winter may be considered final for the beekeeper. For me, this year saw two ups,the bees for a total of four, or five weeks of nectar flow. The rest has been down. However, it is satisfying to know that my bees are in good condition as they are laid by for winter.

NEW ZEALAND APIARIES ACT

THE APIARIES ACT of New Zealand requires every beekeeper owning 50 or more hives to pay an annual levy to the National Beekeepers' Association. The rate of the levy is set each year by the Minister of Agriculture after consulting with the N.B.A. and the Honey Marketing Authority of New Zealand.

Notes from the Straw Skep

By BESS CLARKE
Canton, PA

OUR NATIONAL PARK SERVICE is restoring the historic village where John Brown made his desperate raid in an attempt to free slaves — an effort which was one of the precipitating causes of the Civil War.

The history of our country comes alive as one views the dsescriptive film at the Visitors' Center and walks up the stone steps to the church which maintained neutrality by flying the British flag.

Harpers Ferry, West Virginia, situated at the confluence of the Potomac and Shenandoah rivers, was an important gateway to the West in the early 19th century. The states of Maryland, Virginia, and West Virginia meet at this point, with the rivers serving a boundary line. George Washington chose the site for a federal armory and arsenal which began producing and storing arms about 1800.

Robert Harper, for whom the town is named, moved to the area in 1747; took over the operation of an existing ferry, and built a mill. His house is the oldest surviving establishment in the town. When he died in 1782 he left land for a cemetery, in which he is buried.

The town was built into the steep hills which rise from the river banks. Most of the present town is located at the top of the first rise where the buildings are safe from the frequent floods which roar down from the Blue Ridge Mountains. A set of steps was cut into the natural rock around 1800 to allow access to the upper levels of the village.

The scenery is spectacular. Thomas Jefferson visited the area in 1783 and described the view from a lookout ledge as worthy of voyage across the Atlantic. He may have been an early P. R. man for the European tourist.

The restoration is centered at the point, on the banks of the two rivers, where the Arsenal, the Master Armorer's House a Dry Goods Store, Stagecoach Inn, Whitehall Tavern, Pharmacy, Confectionery, and other buildings of the original village were located. A row of shops and private residences extends up High Street to the location of the present town.

John Brown, a fanatic abolitionist, conceived a plan to liberate slaves and set up a Free-Negro stronghold in the mountains of Maryland and Virginia. He gathered an 18 man army of liberation and attacked the armory at Harpers Ferry on the night of October 16, 1859 in an effort to obtain guns for his insurrection. When the alarm was spread Brown and his men barricaded themselves in the fire engine house (subsequently known as John Brown's Fort) where they were captured two days later by a contingent of Marines commanded by Col. Robert E. Lee and Lt. J.E.B. Stuart.

Brown was tried, found guilty, and hanged within two months of his revolution, and became a symbol of freedom for the slaves.

The Civil War was disastrous for Harpers Ferry. The Armory was burned to keep it from falling into Confederate hands, and armies from both sides occupied the town intermittently. At one time a garrison of 12,000 Union soldiers was captured by General "Stonewall" Jackson.

One bright spot in the story of Harpers Ferry was the establishment, after the Civil War, of Storer College, one of the earliest institutions of higher education for the American Negro.

The town is enjoying a renaissance with its designation as a National Historic Park. The needs of visitors are catered to with a variety of services and shops, including an annual "Old Tyme Christmas Celebration" held the first weekend in December. Public buildings and private homes are decorated for the occasion and there are special programs, dinners, concerts and candlelight ceremonies.

During the summer months an increased interest in white water rafting and canoeing have a new dimension to the activities in the area.

Harpers Ferry National Park is located on Route 340 about 20 miles west of Frederick, Md. A superintendent, whose address is Box 65, Harpers Ferry, WV, 25425, is in charge.

This recipe for Protein Bread should interest any of you who are looking for a nutritious high bulk loaf.

Protein Bread: ¾ cup honey, ½ cup corn oil, 2 beaten eggs, 1½ cups mashed bananas, 2 tablespoons sour milk, 1 teaspoon soda, 2 cups whole wheat flour, ½ cup dry powdered milk, ½ cup bran, 1 teaspoon cinnamon, ½ cup nuts. Combine honey, oil, eggs and mashed bananas. Stir the soda into the milk and add to the liquid mixture. Combine dry ingredients and blend into the mixture. Mix in nuts last. Pour into a greased and floured loaf pan. Bake at 350°F. for one hour. Allow to cool 10 minutes before removing from pan.

"I'M SURE FLETCH ISN'T INTERESTED IN WHAT YOU PAID FOR A JAR OF HONEY WHEN YOU WERE A BOY, FRED".

Questions and Answers

Q. How do I find the queen? I can never find her, try as I may. A.R. Ohio

A. Finding the queen can be quite tricky and about the only advice we can offer is to keep trying until practice enables you to find her under the unsual circumstances. Under ordinary conditions the queen bee will usually be laying eggs and she can usually be located in the comb area which contain very young larvae or eggs. Experienced beekeepers have developed the knack of looking at the whole comb rather than individual bees when looking for the queen. With practice she will appear to be quite visible in the field of view when using this technique.

If finding the queen is the object of opening the hive use the least amount of smoke as is possible. Quite often when the sun is shining on one side of the hive on a cool morning the queen may be located on that side.

Begin the examination of the combs by carefully removing the first comb. If the queen is not found place it aside, standing it on end near the front of the hive away from underfoot. Remove the adjacent comb, examine it, and replace it if the queen is not found. Continue to examine each comb leaving a space between the comb just examined and the next one to be examined during the process. Continue examining until the queen is found. In a two story colony the possibility of finding the queen in the upper chamber is usually the best although when the upper unit fills with honey she is forced into the lower unit. Queens are not usually found on combs containing open cells of honey or on combs filled with capped honey.

Finding a queen in a strong colony of bees is much more difficult than finding one in a small colony. Examining a strong colony of bees may appear to be a formidable task to most beekeepers. Finding the queen among the thousands of workers may seem an impossibility. If the queen cannot be located by a comb-by-comb examination it may be necessary to use another method. One suggestion is to set aside the hive bodies, place a queen excluder atop the bottom board and place an empty super shell on top. Remove each comb, brush or shake the bees off the comb in front of the entrance and return the comb to the empty hive body. After the combs have all been brushed free of bees and they have re-entered the hive the queen and perhaps drones will be found on the bottom side of the excluder.

Q. As a novice beekeeper, I was surprised and pleased when I discovered a swarm had moved into an empty set of deep hive bodies I had left in my bee yard. Unfortunately, this occurred in early August. Against most predictions I decided to attempt to keep the swarm and work with it, rather than unite it with one of my other two hives.

By the time I discovered the swarm, they had built five or six pieces of burr comb, the largest about 12 inches across, suspended from the underside of the inner cover, hanging down into the empty deep supers. Following the advice of local beekeepers, I broke each section of comb away, pressed it into a cross-wired frame, secured it with twine, and set it into a deep super. The six resulting frames were centered in the super and surrounded with frames with foundation. I then began feeding syrup from above.

In the six weeks since this was done, the bees have remained in the hive, raised brood, gathered pollen, and stored some honey. I have since added a shallow super of drawn comb, which has been about one-third filled with honey. In the brood chamber, the bees have ignored the foundation and continued to build comb hanging from the top bars next to the foundation, but not attached to it.

My questions are: 1) Was there a better way to handle this problem, short of uniting the swarm with another colony?; 2) How do I now give the colony the best chance of survival for the winter?; and 3) Why have the bees continued to build free comb rather than draw out the foundation, and how can I best handle this problem? D.M. Vermont

A. In answer to your first question, we doubt if there would have been any other way to handle the bee colony other than the method you used.

In regard to your second question, the feeding should be continued as long as the colony will take syrup or extra combs of honey can be added to the brood chamber and the honey storage area above. A wrapping of water-proof paper and a sheltered location will help to protect them from the cold winds which are the greatest hazard to outdoor wintered colonies.

In regard to your third question, the answer is very difficult to pinpoint since this colony was raised and developed under rather abnormal conditions. Bees usually follow the foundation as a comb base, but apparently this colony is an exception. I cannot give you the exact reason why this has happened. Perhaps there is something in or on the foundation that repels them. Normally frames with foundation properly spaced would not allow enough room for natural combs.

★★★★★

Q. Is it OK to store honey in a garage where there are freezing conditions? I have a barrel full and don't want to move it just yet. T.B. Minnesota

A. We would suggest that your honey be stored in a warmer place than the garage if you wish to delay granulation as long as possible. If the granulation of honey is not important this would make a satifactory storage place, unless the garage is damp, which may not affect the honey only if the drum is tightly sealed.

The best storage place, under all circumstances, is a fairly warm, dry room for maximum protection.

★★★★★

Q. Are bats predators of bees? As an experiment I plan to put two hives in and old house. There are bats in the attic and I wonder if they will be a problem.

I am buying some second hand hives that have not been used for at least six years. There is no evidence of disease but should I disinfect them in any way after that time? J.M. Pennsylvania

A. To my knowledge the bat is not a predator of bees. Bats feed during hours that honeybees are not likely to be flying.

Your second question concerns a dilemma that is often encountered by beekeepers. Of course if you do not know the history of the prior use of the equipment there is always the question of whether the equipment harbors the disease spores of the foulbroods. There are no disinfectants that are effective against foulbrood spores except the ETO fumigation chambers. Only a few states have them available for beekeepers. Check with your apiary inspection service for information in regard to the availability of these units.

An examination of the combs may possibly reveal whether the bees died of one of the foulbrood diseases. A close examination of the cells would reveal dark brown, dried up scales, the remains of dead larvae which adhere tenaciously to the lower cell wall and may be seen if the comb is held upright, as it normally hangs in the hive. Even without this evidence the combs may still contain spores, as a source of new infection. Sometimes the dried up remains of the pupa may be lying on its back in the cell with a tongue projecting upward. Any combs showing evidence of having come from a diseased colony should be burned.

★★★★★

Q. I would like to know if Fumidil-B and Terramycin can be fed at the same time—J.V. Pennsylvania

A. This is not recommended. One will inactivate the other.

★★★★★

Q. The first year I started with bees, my hive came down with foulbrood. I restarted the following year with new hives and had a terriffic first year harvest with a good healthy hive. The bees wintered well, I treated the hive with Terryamycin in May. The hive was doing very well until mid-June when we again contracted foulbrood and I lost the hive. There are several hives within a ½ mile radius, and all have remained healthy. I also raise game birds and chickens. The hive has been near the birds pen. Could this be something picked up from being too near the chickens? I would appreciate any suggetions, as I plan to try once again. N.M New Mexico.

A. We can say with certainty that the foulbrood, which your bees came down with, was in no way related to the game birds and chickens near the hives. You evidently have an AFB source somewhere in your area. Perhaps a bee tree colony that died out due to AFB. When nectar is in short suply you bees rob those combs and carry the disease back.

★★★★★

Q. I am enclosing a brochure on electric bug killers. Will honeybees be attracted by the light and fly into it and be killed? How close can they be put by a hive? A.B. Indiana

A. Many commercial beekeepers use these units to kill stray bees in their honey house, so bees are attracted to them. Whether they would be under a normal colony situation we're not sure but would suggest keeping it about 200' away at first.

★★★★★

Q. Could you please tell me if a beekeeping school exists? I am very interested in attending a university or vocational school and specializing in beekeeping. If such an institution exists would you please send me any helpful information concerning the school. R.A. Texas

A. We suggest you contact Mr. James Tew, Beekeeping, Agricultural Technical Institute, Wooster, OH 44691. The telephone number of Mr. Tew's office is: (216) 264-3911.

Award for Christopher Goff*

From Haverford College News

HAVERFORD COLLEGE'S Christopher Goff, a 34-year-old molecular biologist who raises bees as a hobby, has won a prestigious Camille and Henry Dreyfus Teacher-Scholar Grant. He is one of just 16 young faculty members in the United States to receive the $35,000 awards this year, and the only recipient from a liberal arts college.

Goff, an assistant professor of biology, has been on the Haverford faculty since 1975. He will use the Dreyfus grant for basic research in biochemistry, and in the Haverford tradition, plans to involve undergraduates in his work. Specifically, Goff intends to develop a laboratory course in gene cloning in which advanced students will assist him in an attempt to clone genes, which are involved in regulating gene expression, from a bacterial virus.

Goff is magna cum laude graduate of Amherst College with a PH. D. from Harvard. Before coming to Haverford, he studied at the Medical Research Council Laboratory of Molecular Biology in Cambridge, England, on an American Cancer Society Postdoctoral Fellowship and a postdoctoral fellowship awarded by the European Molecular Biology Organization. During the past several years he has received grants from the National Science Foundation and the National Institute of Health. His research falls into two major areas: An investigation of the molecular machinery viruses use to divert a cell's energies and a study of gene expression in yeast.

The molecular biologist's interest in beekeeping dates from 1960 when as a teenager in Barrington, Rhode Island, he discovered some long abandoned hives in the attic of the family home. His father had raised bees in the 1920s, and 15-year-old Chris took up the same hobby before going off to college. After settling in Haverford, he built up a colony in his back yard. He uses it to introduce biology students to insect behavior — and in good years, his surplus honey is on sale in the college bookstore.

A member of the American Association for the Advancement of Science, Goff is also a member of Phi Beta Kappa, the Sierra Club, and The National Trust of Britain.

He and his Wife, Elinor Gage Ives Goff, live on College Avenue in Haverford on the edge of the College's 226-acre campus.

***See August, 1979 Gleanings Cover**

EUROPEAN FOULBROOD HITS AUSTRALIAN BEEKEEPERS

"THE BEEKEEPING INDUSTRY in southeastern Australia has been rocked back on it's economic heels by European foulbrood" according to an article in the **New Zealand Beekeeper.** "Today the disease is rampant in South Australia, Victoria and below a quarantine line drawn across southern New South Wales" the article states. European foulbrood has not been found in New Zealand. American foulbrood infection in New Zealand is about .8 percent of the total colonies.

New Jersey Beekeepers' Association

By LIZ RODRIGUES
Colts Neck, New Jersey

THE NEW JERSEY Beekeepers Association is a non-profit organization open to anyone interested in honeybees. The Association was founded in 1902.

But, not many persons know that The A. I. Root Company played a leading part in its formation. There were six organizers and early planning meetings were held in New York City where the A. I. Root Company was located. They later sponsored a joint meeting in 1905 in Jenkinstown, Pennsylvania at a demonstration apiary of theirs.

The Association had a rough start in 1911, but proceeded to grow, and is now considered to be one of the finest state organizations in the United States. Membership is 850. Robert D. Barclay of Riverton served the longest term as a President — 12 years, and Elmer G. Carr of Pennington served as a Secretary-Treasurer for 36 years. Milton H. Stricker, now of Stockton served two years as a President, nine years as Secretary-Treasurer, and approximately 10 years as the Editor of the N.J.B.A. Newsletter.

Initially, the official publication Newsletter was known as the "New Jersey Bee Culture." Later, the name was changed to the N.J.B.A. News. Its goal is to print practical ideas and guidelines in the care of honeybees and other bee related subjects. Some past editors were: Milton H. Stricker, Rev. Joseph Stewart, Jack Matthenius. Robert Appleby of Lincroft is the current Editor, Joe Wojciechowski of South Amboy the Publisher and Grace Vogel of Old Bridge is the official photographer.

Years ago, the once very powerful Bergen County Beekeepers Association and the Passaic County Beekeepers were affiliated with the N.J. Beekeepers Association, but both are no longer in existence. The Essex County Beekeeping Society and the New Jersey Apiculture and Pollination Society in the Northern part of the state are not affiliated with this Association.

Currently, the State Association comprises five of the following Branches: Sussex County, Morris County, North West, Central and South Jersey. They have been in existence from 11 to 37 years and have from 55 to 185 members in each group.

Our organization holds four meetings each year. The annual winter meeting is always held in January during N.J. Farmers Week in the Trenton area. The spring, summer, and fall meetings are held in other parts of the state for the convenience of the majority. The annual dinner-dance is held in conjunction with the N.J. Honey Queen Contest in the fall and has become a warm and very special social event for the year.

Presently, George J. Schaefer of Flemington, a commercial beekeeper is serving his second year as President, Edward J. Littig of Lakehurst, 1st. Vice President, Jack C. Matthenius, Jr., of Phillipsburg, 2nd. Vice President, Ellis F. Schweitzer, Newton, 3rd. Vice President and Mrs. Liz Rodrigues, Colts Neck is in the fifth year as Secretary and Treasurer.

Some of our immediate past presidents have been: Milton H. Stricker, Stockton; C. Franklin Peterson, Pitman; Henry L. Vogel, Old Bridge; William Garthe, Asbury; Michael Valosin, Lakewood; Howard F. Lonsdale, West Caldwell; David L. Prudden, Long Valley; Charles G. Yerkes, Pemberton, Thomas J. Webb, Sussex and Lester Shimp of Woodstown.

Past Secretary-Treasurer's were: Milton H. Stricker, Stockton; Jack Lancaster, Asbury; Claire Dutcher, Bangor, Pa.; and Mary R. Webster of Doylestown, Penna.

In January of each year, during N. J. Farmers Week, the N.J. Beekeepers Association sponsors the N.J. Honey Show. Entries are on display in the Rotunda of the State Capitol Building in Trenton for a week. The entrants take great pride in their finished product and save their choice honey for this show and very impressive display.

In the fall, the Association sponsors their annual Honey Queen contest. Each of the Branches select and send their honey queen candidates to vie for the title of N.J. State Honey Queen. Mrs. Eve Wilson, Freehold has served as the chairperson for many years and supervises the preliminaries. Three judges decide the winner. Miss Heidi Marie Zipfel, 20 of Fleminton is now the reigning New Jersey Honey Queen for 1978-1979.

On June 20,1974, the honeybee officially became the New Jersey state insect. A class of 24 second grade students from the Sunnybrae School, Hamilton Township, Trenton, under the leadership of their teacher, Mrs. Ann Zuzov, thought up the legislation of this official act as part of a project on how democratic government works The childern attended the official signing, along with their teacher, the Assemblymen, Senators and Brendan T. Byrne, Governor.

There are approximately 50,000 colonies of honeybees, owned by 5,000 beekeepers in New Jersey. The majority of the beekeepers are hobbyists. Only 8 in the State make a full living from beekeeping.

Some of the main crops in New Jersey pollinated by honeybees are: apples, peaches, pears, blueberries, cranberries, strawberries, asparagus, eggplant, cucumbers, melons, pumpkins and soybeans. In 1978, Phillip Marucci, the extension specialist at the Blueberry-Cranberry Research Center in Chatsworth reported the blueberry industry in New Jersey had grossed 4 to 5 thousand dollars per acre. The bee industry in N.J. is said to be worth between 3-4 million dollars, with over a million pounds of honey produced annually.

The N.J. Beekeepers Association sponsors Honey Show/Sales and Live Bee Demonstrations at the Malls. They have found this is the most effective place to promote honey, bees and beekeeping knowledge to the general public. Schools are notified prior to the show, so they can send busloads of childern. Bob and Dottie Harvey of Elmer supervise these very successful shows. This year the Association also participated in the Mid-Atlantic Flower Show at Convention Hall in Asbury Park. We owe a debt of gratitude to the Harveys for doing such a fantastic job of public relations, and putting the shows together.

In 1977 and again in 1978, the N.J. Beekeepers Association was instrumental in preventing the enactment of anti beekeeping ordinances in two towns. Key people in the Association made appearances at Town Hall meetings to advise the officials of the realistic reasons of why their proposed ordinances would not work. Many towns attempt to draw up the ordinances hastily after even one single complaint of a child being stung by an unknown culprit. In most cases, it turns out that a yellow jacket or hornet had caused the problem.

In October of 1971, the ethylene oxide (E.T.O.) chamber was donated to the N.J. Department of Agriculture by the Federal Government. This $35,000 obsolete piece of NASA equipment was rewired by William Garthe of Asbury, and is used to sterilize diseased and contaminated bee equipment. It holds 44 deep supers and has saved 3 million dollars worth of bee equipment to date from being burned because of American foulbrood disease.

The chamber was given Federal approval and State 24-C registration by the Envrionmental Protection Agency on March 12, 1977, and is operated by the N. J. State Bee Inspectors. The N.J. Department of Agriculture expects delivery of a portable Billy Misko fumigation chamber that can be hauled to all locations in the state. After its arrival, and it is put into service, the Department will turn over the present, stationary E.T.O. chamber to the N.J. Beekeepers Association so they can operate it for the beekeeping industry in N.J. This stainless steel unit of 5 tons is now said to be worth about $90,000.

Elmer G. Carr of Pennington had served as N.J. bee inspector from 1911 until 1935. On his inspection trips, he walked, rode bicycles, horses, cars, trains and worked under adverse conditions. He made a great contribution to beekeeping practices in N.J. On his retirement in 1935, Paul L. Holcombe of Lambertville was named Supervisor of Bee Culture in the N.J. Department of Agriculture. He was assisted by deputy bee inspector, Jack Matthenius, Jr., of Phillipsburg from 1947 until Mr. Holcome's retirement in 1955.

The beekeeping inspection service in New Jersey has been under the supervision of Jack Matthenius, Jr. of Phillipsburg since 1955 when he was appointed Supervisor of Bee Culture. For a time, he was assisted by George T. Duffhass, Thomas N. Digney and in 1964 by Lester Shimp of Woodstown who became a full assistant. Paul Raybold of Phillipsburg was then added to the bee inspection force. Lester Shimp resigned in January of 1973 to become a commercial beekeeper and in July of that year, Walter Wilson of Freehold was appointed to fill that position. Through these fine bee inspectors diligent efforts, N.J. beekeepers can relax knowing they have things very much under control. Harry Connor 88, of Stockton had served as a part-time summer bee inspector assistant under both E. G. Carr and Paul L Holcombe.

In January of 1976, the N.J. Beekeepers Association formed a Bee Theft Prevention Program. C. L. Bankhead of Piscataway was named coordinator of the project. Beekeepers brand or mark their beehives, and register this information. Many believe branding bee equipment seems to act as a deterrent against the theft of colonies of bees. The Central Jersey and North West Branches have purchased their own branding equipment for their members' use.

In 1979, bears have been creating a problem in destroying beehives in parts of Mercer, Hunterdon, Warren and Sussex Counties,. Recently, 8 out of 15 were destroyed in Hopewell, N.J. Some suggest electric fences be used to deter the bears, but this method is not too successful. Others suggest heavy duty chain link fences be constructed around the beehives.

In 1960, under the Presidency of Paul L. Holcombe, New Jersey hosted its first EAS Conference. In 1971, under Presidency of Jack Matthenius, Jr., the EAS Conference came to N.J. again. In 1978, Jack Matthenius, Jr. was elected to a 4-year term as Chairman of the EAS Board of Directors.

Mrs. Liz Rodrigues of Colts Neck completed 3 years as the EAS Secretary, and is beginning her 2nd year as both Secretary and Treasurer. Dr. Radclyffe B. Roberts has been elected to serve as EAS 2nd Vice President and will be President when the EAS Conference comes to New Jersey again August 5 through 8, 1981. Walter Wilson is beginning a four-year term as EAS Director.

Dr. Radclyffe B. Roberts, Assistant Professor of Apiculture at Cook College-Rutgers University, New Brunswick, since April of 1974, directs the program of teaching and research in Apiculture. He also conducts a 3-day beginners' and 3-day advanced beekeepers' short course during the summer. Dr. Bob Berthold and Jack Matthenius, Jr. assist him in the course.

Dr. Roberts is also assisted at Cook College by Tony Jadczak as a bee technician. Tony is a native of East Brunswick, a graduate of Cook College and a beekeeper for many years. Prior to Tony Jadczak's appointment, Dale R. Morse assisted Dr. Roberts for over two years. Dale returned to his home state, Watertown, New York in July of 1979. He'll be missed.

We are very grateful to all of our predecessors who gave all they had for the betterment of the N.J. Beekeepers Association. Their efforts were not in vain. With the help of some very dedicated people, we can anticipate success in our future endeavors.

When called upon to serve, each officer did the best that they could. There is still a lot more to be done, it won't be easy, but we'll do it. On October 22, 1977, the Association celebrated its 75th Diamond Jubilee with 218 present at the Holiday Inn, Bordentown, N.J. THERE HAS GOT TO BE SOMETHING GOOD ABOUT AN ORGANIZATION THAT HAS SURVIVED FOR 77 YEARS!

What Have We Here?

THIS OLD hive turned up recently near Medina after being stored for many years in a farm building. No one seems to be able to identify it positively but it would appear to be dated prior to 1900. Old editions of **ABC and XYZ of Bee Culture** picture a hive of similar construction during the era of the late 1890s.

Examining the old hive is Shirley Klinect of Burbank, Ohio.

Denver Entomological Meeting Report

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

THE PENNCAP—M WHITEWASH

PENNWALT CORPORATION, manufacturers of Penncap-M, held a one-sided conference which they entitled **Microencapsulated Insecticides: Agricultural Benefits and Effects on Honeybees** at the recent meeting of the nation's entomologists in Denver, Colorado. They brought in six speakers and proposed a discussion period to follow the presentations.

Four of the six speakers told of the virtues of Penncap-M, which is the highly toxic insecticide methyl parathion in nylon capsules. The chief value of encapsulation is that toxicity of the pesticide to humans applying the chemical is reduced while its insect killing properties are retained and, in many cases enhanced.

The tragedy is that these tiny, microscopic capsules are so similar to pollen grains that they are collected, processed, and eaten by bees as if they were pollen. They cling to the hairs on bees' bodies through static electricity and are brought back to the colony, where they can kill bees for months.

The speakers included a retired physician who said something to the effect that he would "review what I am sure you are all familiar with, "and then proceeded to give a kindergarten level lecture on the toxicity of pesticides to man. No one asked him any questions in the discussion which followed the talks.

James Lowell of Pennwalt pointed out that Penncap-M, which was commercially introduced in 1974, is now registered for use on 21 crops. Sales have increased about 40 per cent, compounded, every year.

Penncap-M is a favorite for control of corn borers (an important insect pest) according to one speaker. For me, one of his most important comments was that the most common corn variety used in 1979 was less resistant to corn borers than that used in the past. This tells us clearly that corn, like so many plants, can be bred for insect resistance. However, so long as plant breeders have pesticides to rely upon they pay little attention to this apsect of plant breeding.

A fruit specialist from Michigan said he was pleased to be introduced as an ecologist which, as he said, "was a useful title when seeking money to support my program". Twice he mentioned there was a zero tolerance for a particular insect on fruit but insecticide residues apparently did not concern him. He said of beekeepers, "Typically, they exaggerate" their claims of pesticide losses.

Only two of the speakers addressed the question from the beekeepers' viewpoint. One was Larry Atkins of California, who reported on his summer's research. He used antistatic materials in an attempt to remove the electrical charge on the Penncap-M capsules, but his data showed no decrease in toxicity to bees. The second stated that we needed "facts not speculation" but that since his data from last summer had not yet been analyzed he had little to contribute.

Roy Barker, recently retired from the USDA Bee Laboratory in Arizona, who was not asked to speak, distributed copies of his 1978 paper on **Pesticides and Honeybees: The Danger of Microencapsulated Formulations,** which shows clearly that Penncap-M contaminates the hive environment more seriously than any other pesticide.

An almost dull question and answer period followed their presentations. One does not encourage an in-depth discussion by constituting a panel on which most of the speakers sitting at the head table echo each other.

Conclusions

I came away from the meetings discouraged. Little has changed. Controlling insect pests through using biological control, said to be on the horizon ten and twenty years ago, has yet to be achieved. The use of pesticides continues to increase each year in the U.S. The Environmental Protection Agency, which was to have been a guiding light, is still there but is not a strong force on the American scene; it is responsible for having placed Penncap-M in a "restricted use" category, which has helped, but the use of this insecticide is on the rise.

In brief, beekeepers can expect to lose bees in large numbers to pesticides in the near future and Penncap-M will continue to be one of the most serious problems with which they must contend.

It is imperative that industry and Federal agencies learn that microencapsulated pesticides are unacceptably detrimental to insect pollinators; greater economic losses will result from poor pollination for many crops than can be justified by the questionable benefits of controlling pests of a few crops, especially when other alternatives are available. The slight positive virtue of Penncap-M is that it may teach this important lesson.

What can beekeepers do about pesticides and Penncap-M in particular? Two things, one imperative: **First,** support the national beekeepers' organizations, write members of Congress and encourage the Environmental Protection Agency to adhere to its goals; that agency is under heavy fire from many organizations to relax its rules. **Second,** document cases of bee poisoning by reporting them to the ASCS, the state colleges, the USDA, Conservation groups etc. If cases of bee poisoning are not reported and documented, then those who can make changes will be under the impression there is no problem.

Varroa jacobsoni in Maryland?

By I. BARTON SMITH, JR.
State Apiary Inspector
Maryland Department of Agriculture
Annapolis, MD 21401

VARROA JACOBSONI is a reddish-brown mite measuring 1.0 by 1.5 mm in size. Mature female mites are found on adult honeybees. Females deposit eggs in open brood cells just before the cells are capped. The emerging nymphs feed on the larvae and pupae, either killing or deforming bees.

V. jacobsoni has been described as being more serious than any other disease, including American foulbrood. De Jong recently described field identification of the mite in the December, 1979 issue of **Gleanings In Bee Culture.**

On November 16, 1979 two mites reportedly collected in Maryland on a single drone honeybee were identified as ***V. jacobsoni*** by Dr. Ed Baker of the Insect Identification and Beneficial Insect Introduction Institute of the USDA. This is the first report of ***V. jacobsoni*** occurring in North America.

The drone was collected by a University of Maryland graduate student on a flower at Hyattsville, Maryland during August, 1979. The student did not observe the mite on the drone but in November she noticed the mites floating in the vial of alcohol containing the drone.

The Maryland Department of Agriculture began inspecting all colonies within a two mile radius of where the mites were reported to have been collected. Fortunately, we were able to make the inspections during unusually warm weather (60 to 70 degrees F.) the week after the mites were identified. In addition Dr. H. Shimanuki, Chief, USDA Bioenvironmental Bee Lab provided us with the diognastic aids to examine the colonies for the pest. Dr. Shimanuki suggested a method developed in West Germany for treating colonies with Kelthane to aid in the detection of mites. This method, which has been used sucessfully elsewhere, is conducted in the following manner: Colonies are sprinkled with the dilute Kelthane solution. A white paper, covered with a piece of wire screen positioned ½ inch above is placed on the bottom board of the colony. After 24 hours the screen and paper are removed and examined for any mites that were killed.

To date, all registered colonies within the vicinity of where the mites were first collected have been examined. No mites or evidence of possible mite damage were observed. The Maryland Department of Agriculture in cooperation with the USDA Bioenvironmental Bee Laboratory, the Animal and Plant Health Inspection Service (APHIS) and the University of Maryland will make additonal surveys for ***V. jacobsoni in*** in the spring.

All beekeepers, apiculturists, apiary inspectors are urged to be on constant lookout for the Varroa disease. Any possible finds should be reported and specimens sent to Dr. H. Shimanuki, Chief, Bioenvironmental Bee Laboratory, Bldg. 476, Agricultural Research Station, USDA, Beltsville, MD 20705.

Frame Spacers

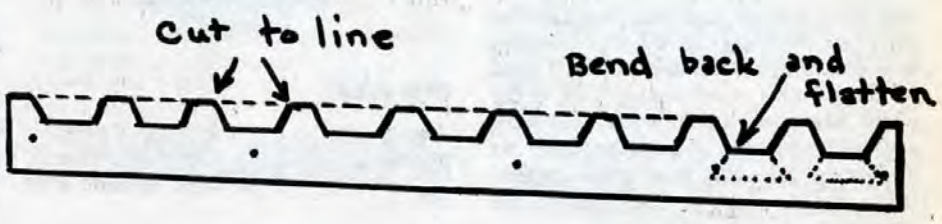
By Walter Crawford
Massillon, Ohio

MANY BEEKEEPERS USE nine evenly spaced frames in the brood chamber instead of the usual ten. It allows more room for easy removal and so helps to avoid injury to the queen and workers. This practice does induce the construction of burr comb between the top bars because the bee space is a little too wide. The bees will be rolled because of this burr comb also unless it is removed before the frame is lifted and bees may also be crushed when the frame is replaced.

Metal spacers can be purchased from bee equipment dealers in either the nine or the eight frame design. The eight frame spacer may be used in supers having drawn comb and this will facilitate the uncapping of comb when extracting. However, nine or ten frames should always be used until the foundation has been drawn out.

If one has the time and inclination, spacers can easily be made from scrap galvanized furnace duct material. Cut 1¼" strips the length of the rabbet. With a pencil and ruler, draw a line about 7/16" in from one edge. Mark off one inch sections along this line so that the frames will be separated evenly according to the number of frames to be used. With tin snips, cut at an angle into the marks on the line. With pliers, bend the 1 inch areas back so they can be hammered flat. If the rabbets have been routed to about one inch, a bee space will be left under the end of the top bar which will prevent the crushing of many a bee.

The spacers should be nailed to the rabbet with five ¾" flat head nails so that there is ¾" between the top edge of the hive and the part where the frames rest. Sharpen a sixteen penny spike to a point to pierce the metal where each nail is to go. One completed spacer can be used as a template to mark the strips for the others. The drawing shows how the cuts are to be made.



Gleanings Mail Box

Dear Editor:

With regard to the statement under Region 3, Page 558, of the November, 1979 issue, pertaining to beekeepers in Indiana going to have to go out of business because of the high cost of production, I wish to say that much of the problems of beekeepers is selling their honey much too cheap.

You are not doing the beekeeper any favor by publishing the low prices shown monthly in your publication. Too many take your prices to be the facts and try to sell their production at those prices, and as a result, they can not meet their obligations. The prices you are publishing are the prices of the cooked and triple filtered stuff — — — . Any beekeeper who sells his production at the prices shown in your publication should go out of business, because he has no sense of value for his labors nor product.

I do not sell my production at such CHEAP prices and neither does the more intelligent beekeeper. All those who can work for nothing and sell their honey for a mere pittance should be out of the business anyway.

J.G. Davis
1811 5th Ave. N.
Nashville, TN 37208

Dear Editor:

The maidenhair tree, *Gingko biloba,* is widely cultivated in the temperate areas of the world along streets and in parks and gardens. It is one of the wonders of the world as it many be the oldest living genus of seed plants. Usually people grow the male plants (from cuttings). The female plants can be objectionable with their fallen fruits which have the unpleasant odor of rancid butter or goat sweat. The male trees release their pollen in the spring when the leaves are expanding but the actual time of release can be expected to vary from year to year and from place to place. As there are no records of honeybees collecting maidenhair pollen, I need to know if this event occurs. Just as for plants like pines, cottonwoods and most grasses, should the honeybee be discovered gathering maidenhair pollen, they would not be pollinating the maidenhair, merely exploiting it.

This spring, if you live near a male maidenhair, would you please consider making some observations? As the leaves emerge, check the tree frequently so that you won't miss the week it sheds its pollen. When the pollen is shedding, visit the tree during the day when the air temperature is warm enough for bees to fly (above 55° F). Inspect the tree for bees. If the catkins have fallen to the ground, as with cottonwoods, the bees may be found scrambling over fallen catkins for pollen. If you discover honeybees in the tree, determine if there are pollen loads on the bees' legs.

1. Catch the bee(s) with *Ginkgo* pollen on the hind legs.
2. Carefully remove the pollen pellet intact from the legs and tape the pellets to the piece of paper or place the pellets in a small envelope stapled to the paper. Sending the bee with the pellets is discouraged as the animal rots and the fungi that destroy the dead bee destroy the pollen pellets.
3. Include on the paper your name and a description with the date you collected the bee, the time of day, the locality and other details you consider relevant.
4. Send with the pollen and paper a few pressed and dried flowers of the maidenhair tree from which you collected the bee or any leaves of last year from the tree. This will help me ascertain if the tree is indeed a maidenhair. (The pollen is also diagnostic.)
5. A photograph of the bee collecting pollen from the maidenhair would be a useful addition, but optional.

The materials and descriptions should be sent to:

Robert Schmalzel, Metittopalynologist
Carl Hayden Bee Reasearch Lab,
USDA-SEA
2000 East Allen Road
Tucson, Arizona 85719

You would be making a valuable contribution to the understanding of the honeybees' universe. I will properly acknowledge your contribution.

Robert Schmalzel
Tucson,AZ

Dear Editor:

With reference to "Stop That Rot" article by David Wedge, Nov. issue, page 585.

The author states that pentachlorophenol can be used as one of the components of a waterproofing solution. Unfortunately, the phenols are much in the news these days since phenol dumps are releasing poisons that become deadly to life.

While the poison in a apiary treated with penta is small, it becomes dioxin released into the air when the wood is burned. Small amounts of dioxin, even parts per million, when absorbed, are hazardous to life.

The commercial "Penta" may eventually be taken off the market. Correctly, the author chose the less toxic non-phenol solution for his water repellent mix.

"Cuprinol" is the trade name for Copper Naphthenate, which should be used. If not available locally, Florists Products, 2242 N. Palmer Dr., Schaumburg, Ill., 60795, stocks it for shipment.)

Bernie Hayes
121 Miller Street
Wellsville, NY 14895

Michelle Beck.

New York State Honey Queen

OUR STATE HONEY QUEEN is Miss Michelle Beck, daughter of Mr. and Mrs. Stephen Beck of Walden, New York. Michelle is a freshman student at Wells College majoring in French and is also studying Spanish, and hopes to be an interpreter in some phase of business. She is president of two 4-H Clubs, one of them being a beekeeping club.

Don Guthrie, co-chairman of the convention committee and Kathy Starr, Michigan Honey Queen.

Final Plans for the 1980 A.B.F. Convention

FINAL PLANS FOR the 1980 American Beekeeping Federation Convention are now complete. Dan Guthrie, Co-chairman for the Convention Committee and, Michigan Honey Queen — Kathy Stark, are anxiously awaiting this great opportunity for beekeepers from around the world. Conventioneers will be able to exchange ideas and discuss plans for the future of the beekeeping industries.

Michigan beekeepers have the honor of hosting this truly international beekeepers convention. Delegates from 10 countries will be represented. The Hyatt Regency Hotel in Dearborn, Michigan, is the site for the convention beginning January 21st through the 25th. This hotel is part of an amazing complex called "Fairlane". Directly connected to the hotel is a futuristic people mover which will swiftly carry you to a multi-level shopping complex with more than one hundred stores and five cinemas. The shopping mall is an event by itself with waterfalls, pools and stage areas for entertainment purposes such as live music and puppet shows.

The convention activity provides an excellent opportunity to combine business with pleasure. Guest speakers and leading authorities will be addressing the convention attendees. A briefing on basic beekeeping will also be a highlight for novice or professional beekeepers.

Aside from the convention business, several tours are available to such places as the Detroit Institute of Art with its Egyptian treasures, French impressionists and modern collections.

The Stroh's Brewery offers not only a tour of the brewery but also a luncheon in the famous German "Brauhaus".

For those who want to see how cars are built, the Ford Motor Complex offers a tour of the Ford Assembly line.

Greenfield Village, a part of the Ford Motor Complex, with its famous Henry Ford Museum, is an excellent place to relive the "good old days".

You can also relive the old days by visiting the Meadowbrook Estate, the late home of Matilda Dodge Wilson. The home has 100 beautifully appointed rooms and offers a luncheon in the main dining salon.

To make this truly an international experience, a dinner evening in Canada is available at one of Windsor's lovely supper clubs . . . complete with entertainment and dancing.

The place to be in January 1980 is at the 36th Annual American Beekeeping Federation Convention. You can look forward to a most pleasant and productive experience in promoting and supporting the honey industry. See you in-January!

Summary of EPA Action on Penncap-M

From a letter by Frank T. Sanders, E.P.A. to Roy Thurber. V. P. Wash. State Beekeepers' Assoc.

AS YOU KNOW, when we federally registered Penncap-M in 1974, we considered its potential adverse effects on non-target organisms including bees in a conventional pesticidial context. At that time we did not anticipate the adverse effects Penncap-M would have on bees as a result of its unique property of bee affinity. Furthermore, as is now commonly recognized, this capsule affinity for bees is the basis of the problem which allows foraging bees to transport the microencapsulated methyl parathion to hives with disastrous consequences.

Since Penncap-M 1974 Federal registration, we have received numerous reports, many of which were verbal, from beekeepers indicating that this product was responsible for killing their bees. As a result of these concerns which were also expressd by other interested groups and individuals, we re-evaluated the data base used to register Penncap-M.

Our re-evaluation of Penncap-M clearly showed that many of the concerns expressed by these groups and individuals were valid. Consequently, this Agency took steps to resolve the Penncap-M bee kill problems. In my letter of March 20, 1979 and Douglas Campt, the Director of the Registration Division, letter of October 25, 1978, both of which were sent to you, we outlined these steps. Since that time certain of these actions have been implemented.

We classified Penncap-M for restricted use on March26, 1979 in accordance with the provisions of Classification by Regulation Procedures. Additionally, we now require pre-bloom intervals when the product is used on certain crops. Labeling wording has also been strengthened with respect to the bee precautionary statement. Moreover, we are requiring Pennwalt, the registrant of Penncap-M, to provide E.P.A. with an effective chemical method to detect the capsule material when applied to crops. Also, we have asked Penwalt to inform us as to the actions they are taking to minimize bee kills associated with its products.

The Penncap-M bee kill problem as you can appreciate will not be resolved quickly. However, in the short-run, we believe the actions we have taken will begin to produce measurable results in the near future. At this time it is to early too determine the effectiveness of classification in reducing bee kills. Since the labeling revisions have only been required as of September 12, 1979, their effectiveness will not be measurable until the next growing season.

If the bee kill associated with Penncap-M continue during the next growing season, E.P.A. will consider taking stronger measures to remedy this problem.

Marketing Propolis

By WARREN OGREN
Hayward, WI

THERE IS ONE aspect of beekeeping that has had some, but not enough discussion in the beekeeping periodicals.

The Greeks had a word for it — Propolis — Pro as in professional or prologue, and polis as in Indianapolis, meaning before (pro) the city (polis).

So who cares how it is pronounced or what it means? Many beekeepers know it as a messy nuisance and wish the bees could learn to get along without it. Well, propolis is now being used in the medical and health foods field, and the demand for it is becoming more steady (not like the roller coaster — now we are buying — now we aren't market of the last couple of years). With the price of everything skyrocketing, particularly the price of fuel for wax melting, there isn't anyone with ten to ten thousand colonies who can afford to waste this valuable byproduct. Nor can anyone afford to waste his time and fuel to melt down the hive scrapings thereby wasting the propolis which is more valuable than the wax. With just a little effort, it can bring in a nice profit. In fact you might find that it will show more profit for less work than your present method of handling it.

Any beekeeper knows that when he scrapes his hives (boxes, covers & frames) to get rid of the burr comb and propolis, and then renders the scrapings in with the rest of his wax, he is going to lower the grade of his capping and clean burr comb wax, so many of them would just discard the scrapings. Wax is now too valuable to waste, so the scrapings usually end up in the melter and the propolis is wasted.

There is one company now buying hive scrapings (Propolis U.S.A. in Hayward, Wis.). This company does not want your wax, so if you want to salvage the wax first, (and end up with a much better grade of wax in the process) try this — Dump all of your hive scrapings (not anything cleaned up off the floor please!) into a barrel or tub of cold water, then skim off anything that floats to the top and put in your wax melter. Anything that sinks to the bottom is mostly propolis. If this is dumped out on a screen or sheet and allowed to dry — (out of the sun, as it melts easily and spoils it for cleaning) it is then worth twice to three times as much as is paid for the hive scrapings. As for shipping, a woven plastic sack or gunny sack is best , but a cardboard box or barrel will do fine. So give it a try. What little extra time you spend on it can pay a nice return.

Editors Note — We suggest that you contact Propolis U.S.A. c/o Warren Ogren, 1000 Ogren Lane, Hayward, Wisc. . 54843, regarding current prices and shipping information before gathering and shipping propolis.

Illinois Honey Week

By CHARLES & KAREN LORENCE
Aurora, Ill.

WHAT CAN A beekeeper do to promote the use of honey?

The Illinois State Beekeepers' Association recently sponsored Illinois Honey Week. Governor Jim Thompson proclaimed October 14 — 20 as Illinois Honey Week and flyers and bumper stickers were sent to beekeeping organizations throughout the state. They, in turn, distributed them to their membership for personal use.

As local beekeepers, we contacted the public library and offered to put up a display during Illinois Honey Week. They were very interested as we had expected they would be and cooperated by making all of their beekeeping books available for display. We added a suit, hat and veil, gloves, hive tool, smoker, straw skep, a variety of honey and beeswax products, pollen, recipe and promotional folders, business cards and enlarged pictures of various aspects of beekeeping. The display stimulated much interest and many questions.

Promoting such an interesting hobby and one of nature's most perfect foods is exciting and easy to do. It increases consumer awareness and sales. Give it a try soon!

Library display during Illinois Honey Week.

North Dakota Interstate Beekeeper Permit Revoked

From Minnesota Department of Agriculture

IN THE SPRING of 1979, a North Dakota beekeeper requested and received information on the regulatory requirements of moving bees into Minnesota. However, the instructions were not followed and the beekeeper moved 900 colonies illegally into Minnesota for sunflower pollination. Seven bee yards were located, inspected and tagged, "Do Not Move", by a state apiary inspector. The beekeeper was located and charged with four separate violations, each violation with maximum of a $500.00 fine and/or 90 days in jail. At or near the time of court appearance, the beekeeper moved the 900 colonies back across the Minnesota-North Dakota border, destination Texas. Texas authorities were alerted and the Texas permit was revoked based on illegal movement of bees across state lines without inspection and certification.

The North Dakota beekeeper pleaded guilty to all counts in court. A total of $1203.00 was paid to the State of Minnesota.

There was excellent cooperation between regulatory apiarists of North Dakota, Texas and Minnesota. We once again remind beekeepers to follow the proper procedures when moving bee colonies from one state to another. Permits are required.

Interstate regulations exist to stop or reduce the movement of diseases and pests of honeybees. Consider for a moment how quickly the Asiatic Mite, *Varroa jacobsoni* could be moved throughout North America if there was no inspection and certification.

Cassette Recordings Available

THE EASTERN Apicultural Society is pleased to announce that four professional cassette recordings of panel discussions and speeches at the 1979 Ottawa Conference are now available.

No. 1 — "Opening Ceremonies"; "Women in Beekeeping" panel with Roberta Glatz, Mary Cary, Isabel Boisclair, Aalderdina Termeer and Susan Hopkins; "Manangement Tips for the Bee Yard" — Roberta Glatz

No. 2 — "Facing the Future" — panel with Dr. H. Shimanuki, Homer P. Powers, Jacob C. Matthenius and Bernard Levac; "Beekeeping in Nova Scotia" — Lorne Crozier

No. 3 — "Weather Changes and Beekeeping" — Dr. Patrick McTaggart-Cowan; "Beekeeping in Quebec" — Francois Beauchesne; "Bee Nutrition" — Dr. Elton W. Herbert

No. 4 — "Bee Venom Allergies" — Dr. James Day; "Pesticides" — Dr. H. Victor Morley; "Production of Queens and Packages" — Phillip Rossman

The average length of the tapes is 1 hour and 30 minutes, and the price is $5.00 each or the complete set for $18.00. Please make checks or money orders payable to: EAS Conference Cassettes and send to:

EAS Conference Cassettes
The Honey House
R.R. #3, North Gower
Ontario, K0A 2T0

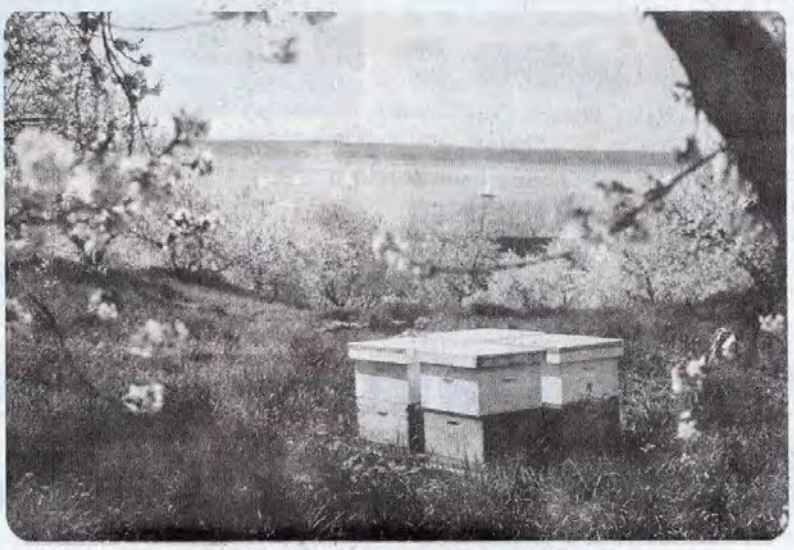
Allow four weeks for delivery.

Michigan Beekeepers Contribute to Pesticide Fund

A SPECIAL thanks to the Michigan beekeepers who donated money to the pesticide fund at Hilbert Honeyland, Traverse City, Michigan. This is just the beginning of a long overdo problem that will only get worse. We beekeepers must band together now like our bees in the hive to survive this massive problem. We cannot depend on anyone else to get the job done. You are on your own. You must police your own area.

We suggest you contact your local agriculture agents with quotes from the bee journals. Contact your pollination customers, farmers and other concerned people and tell them about pesticides killing bees all over the U.S.

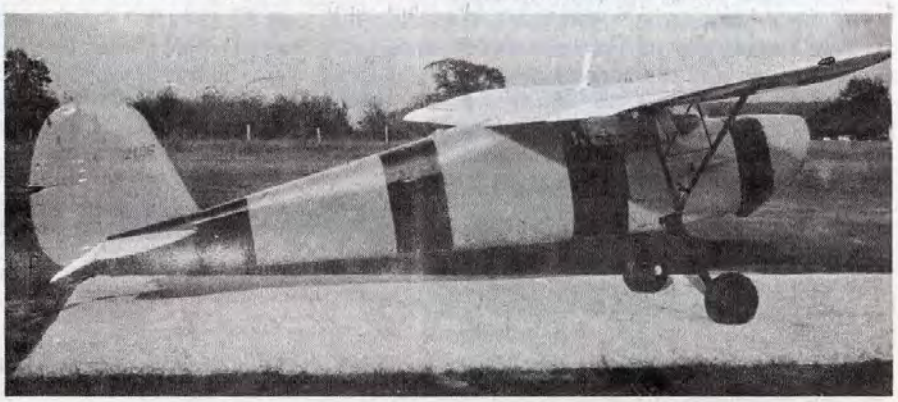
Get involved now before it is too late. We cannot live without bees and pollination.



Bees at Hilberts Honey Land, Cherry Land and Vacation Land.

Bees Killed by Penncap-M in cherry orchards.

The "Last Bee". A light Plane used to dramatize pesticide campaign.



NEWS and EVENTS

Barbara Ann Graybill.

PENNSYLVANIA
Pennsylvania State Beekeepers' Association

Miss Barbara Ann Graybill, daughter of Mr. and Mrs. Edward Graybill of Lititz in Lancaster County Pa., is this year's reigning Honey Queen in Pennsylvania. Queen Barbara is a 1976 graduate of Warwick High School and is presently employed as an accounts receivable and purchasing clerk.

Barbara's qualifications for Honey Queen are numerous and range from her many entries (and prizes) in cooking with honey contests to her practical knowledge of beekeeping.

This has been a busy year for Barbara. She lists many schools, civic and senior organizations, and fairs among her appearances. Shopping mall promotions and beekeeper's activities also fill the list. Her activities at individual appearances range from giving out samples of honey on crackers to explaining the workings of a colony of bees and going into colonies.

Future appearances for Barbara include a large mall promotion for Farm City Week, the Pennsylvania State Farm Show, and the Pennsylvania State Beekeepers' Association's 75th Anniversary Banquet. Many smaller appearances will also fill her calendar.

Barbara will also be traveling to the American Beekeepers' Federation Convention in Michigan to compete for the title of American Honey Queen.

Martha Pemberton.

OHIO
Malone College Beekeeping Course

Malone College will offer a course in beekeeping on Tuesday evenings from Feburary 5 thru March 11. 7:00 — 9:00 P.M.

The course will prepare students to be hobbyists or commercial beekeepers.

Owning bees is not a requirement.

The course is offered through the office of special programs and will be taught by Mrs. Martha Pemberton.

Text books will be available at class time.

Contact office of special programs,
Malone College
515 25th N. W.
Canton, Ohio 44709

NEW YORK
Finger Lakes Beekeepers' Club

The next meeting is Sunday, January, 31st in Ithaca, NY. At 2:00 P.M. The meeting will be at the Farm and Home Center on Fulton Street.

Richard Taylor will be the Speaker and the Subject will be Honey Plants of the Northeast.

NEBRASKA
Nebraska Honey Producers

The Nebraska Honey Producers held their fall meeting, Sat., Nov. 3, at the Ramada Inn, in Kearney. Marion Ellis expained his duties as the new State Apiarist of Nebraska. Dr. Basil Furgala, Univ. of Minn., talked on the disease Nosema and on sunflowers, a new crop in the Midwest. Dr. Orley Taylor, USDA, from Kansas talked on Africanized bees and their effects on beekeeping. Glen Stanley, Iowa State Apiarist talked on encapsulated pesticides.

Election of Officers were held. President — Darrell Leu, Norfolk; Vice President — LeRoy Zehr, Palmer, Nebr., and Secy-Treas. — Jim Dzingle, Loup City, Nebr. Tidings Editor is Marion Ellis, Lincoln, Nebr.

The 1980 Nebraska Honey Queen was crowned at the evening banquet. She is Brenda Bydalek, daughter of Mrs. and Mr. Jerome Bydalek of Franklin, Nebr.

New officers and addresses.
President — Darrell Leu, Route 4, Box 194, Norfolk, Nebr. 68701
Vice-President — LeRoy Zehr, Palmer, Nebraska 68864
Secretary — Jim Dzingle, P.O. Box 11, Loup City, Nebr. 68853

FLORIDA
Beekeepers' Association of Lee County

January Meeting: Monday — Jan. 7, 1980, 7 to 9 P.M. at the Lee County Nature Center — Ortiz Blvd. — Fort Myers. Next to the Eastwood Golf Course.

GEORGIA
Georgia Beekeepers Association

The 5th Annual Hubbard Award, presented by L.M. Hubbard (L), for the Georgia Beekeepers' Association of the Georgia Beekeeper of the Year, Louise Passmore (R), at Savannah, Georgia, October 27, 1979.

OHIO
Mid-Ohio Valley Beekeepers' Association

The Mid-Ohio Valley Beekeepers' Association has its monthly meetings scheduled the third Monday of each month at the Wood County Public Library, 3100 Emerson Avenue, Parkersburg, W. Va. Our tentative schedule is as follows:

JANUARY...Mr. Loren Weinstock from Vincent, Ohio will speak.

FEBRUARY...Mr. Lawrence Goltz, Editor of **Gleanings In Bee Culture** from Medina, Ohio will speak.

MARCH...Dr. Clarence Collison from Penn State University will be speaking on Swarm Control.

APRIL...Mr. Carl Rase from Minford, Ohio will speak on a general topic.

MAY...Dr. Tom Sanford from the Ohio State University will speak.

JUNE...Mr. Don Cooke from Terrace Park, Ohio will speak and possibly demonstrate putting on a bee beard.

JULY...C. A.Divelbiss, Vice Pres. of EAS from Mansfield, Ohio will be speaking.

AUGUST...Mr. Ralph Gamber of Dutch Gold Honey Farms from Lancaster, Penn. will speak.

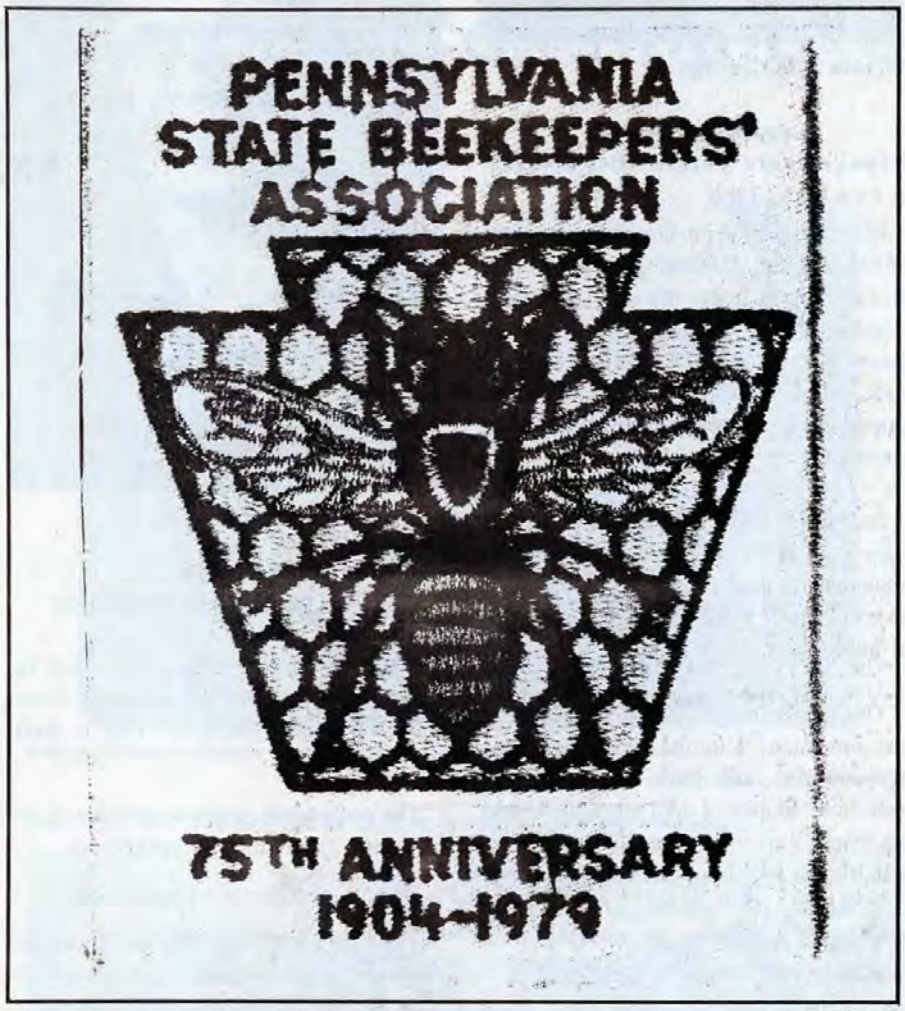
SEPTEMBER...Our annual Gadget and Honey Show with a film on marketing.

MARYLAND
Hagerstown Valley Apian Society

The Hagerstown Valley Apian Society will hold a meeting January 28, 1980, at the County Extension Office, 101 W. Antietam St., Hagerstown, Md., 7:30 pm. Election of officers will be held.

The program will be a visual presentation on nectar sources in our area.

Everyone is welcome.



PENNSYLVANIA
Pennsylvania Beekeepers' Association

The Pennsylvania State Beekeepers' Association had a good crowd to celebrate their 75th anniversary in late 1979. As a memento, these embroidered emblems in blue, white silver and yellow were given out at the banquet along with a glass decorated with the association seal. The emblems can be purchased by contacting Mrs. Glenn Crimbring, R. D. 1, Canton, PA 17724

CALIFORNIA
California State Beekeepers' Association

The California State Beekeepers' Association, Inc. recently concluded its 90th Annual Convention at the Jack Tar Hotel in San Francisco.

Kelli Clark of Garden Grove was crowned 1980 California Honey Queen.

Jack Park was honored as 1979 Beekeeper of the Year and Bruce Beekman was chosen as Junior Beekeeper of the Year.

Special awards were presented to Art Thomas for his outstanding work with the membership committee, Vickie Crosswell for all the time and effort she devoted to 1979 Honey Queen Carolyn Roberts, and to Jennie Faye Sprague for the great job she is doing as editor of the California Bee Times.

Carolyn Roberts, 1979 California Honey Queen, was commended for doing a fine job as California's First Honey Queen and received special gifts from the Honey Queen Committee and the Ladies' Auxiliary.

The newly elected officers of the California State Beekeepers' Association, Inc. are:

Jim Dyer — President
Bruce Beekman — Vice-President
Frank Johnson — Secretary-Treasurer

Officers of the Ladies' Auxiliary are:
Bernice Garcia — President
Esther Dyer — Vice-President
Glenda Wooten — Secretary-Treasurer

TEXAS
Texas Beekeepers' Association

The Texas Beekeepers Association held their 99th Annual Meet in Temple, Texas, on November 2, 1979.

Miss Frances Bean was crowned the 1979-1980 State Honey Queen. She is the daughter of Mr. and Mrs. C. Jack Bean of Fort Worth. Miss Bean is attending Fort Worth Court Reporting College where she plans to graduate in spring of 1980.

Frances is a great believer of honey. She has had experience working bees, harvesting, extracting, bottling and selling honey. She has had radio and television coverage and promoted honey at State and County Fairs.

Frances Bean.

BEEHIVE ASSEMBLY PARTICULARS
(Continued from page 23)

somewhat if two embeddders are deployed, one heating while the other is used. The remaining inch or so at each end of wire which the wheel cannot reach is easily embedded with the fingertip.

It is human nature to seek the easiest way of doing anything. A beginning beekeeper would naturally question the worth of fussing over bee equipment. The considerable expense of new equipment, itself, ought to warrant careful assembly. Further, badly made hives and frames are almost impossible to correct after the fact. In the last analysis, any pains taken in hive assembly will usually be pains avoided time and again in the apiary.

GOATS, RABBITS BEES AND BOYS
(Continued from page 24)

hand but no one had much practical advice on the problems, or nothing I liked the sound of.

Elbert Jaycox at the University of Illinois publishes a newsletter **Bees and Honey**. In the May, 1978, issue he discusses how to introduce a new queen to laying workers to maximize her being accepted. His advice worked for us. We received a letter saying the queen had been shipped. On May 21 we took two frames of brood (sealed and unsealed) with nurse bees from Jason's now thriving hive and placed them in the upper story of Joel's hive. Apparently this helps to reprogram the bees. The next evening we installed the queen cage and she was accepted.

We have finished taking off the 1979 honey crop and the boys had a good harvest from their first package bees. They each had a shallow super of cut-comb honey, each a deep super of extracted honey (46 and 45 lbs.) and Jason had an additional 22 lbs. in a partially filled shallow extracting super. So Jason's hive exceeded 100 lbs. of honey. Their bees will winter over (we hope) in two deep supers well filled with honey. We had a wet cool August for a change which kept plants from drying up as they usually do around here. This contributed greatly to our crop. One of our hives yielded 115 lbs. The other one had 41 lbs. plus a deep super of honey that we gave to a wild swarm we hived in August. So we are going into winter with a total of 5 hives. The last three years have been very hard on the bees. Some winters they make it and some they don't.

Our crop is almost all sold already. There is good local demand for raw honey. We hope to gradually expand the apiary to about 10 hives.

SIFTINGS
(Continued from page 2")

It is indeed refreshing to see Steve's article on page 578 of Langstroth and ventilation. Even after 100 years, many beekeepers still haven't learned the fact that the colder the weather, the more ventilation a hive needs. We still see articles of beekeepers talking about how to keep the cold air out of a hive. Langstroth's idea of lifting the cover a ½ inch or so for the winter is still one of the best methods to vent moisture from a hive and prevent dampness. Yes, let the cold winter air circulate through the hive, don't try to keep it out. The best packed hive is often a dead hive in the spring in cold climates. The strongest colonies are those with plenty of ventilation. Yes, Langstroth is right; bees need more ventilation in winter than in summer.

Peace Corps Seeks Beekeepers

PEACE CORPS is looking for beekeepers with a sense of adventure and a desire to help improve the living conditions of people in developing nations. At present there are requests of people with degrees or experience in beekeeping to serve in Belize (Central America) and Guatemala.

The goal of both projects is to increase the income of small farmers engaged in beekeeping. The job will include evaluating beekeeping techniques and providing technical assistance to host country farmers, as well as to Peace Corps volunteers who maintain hives as a secondary project.

Peace Corps volunteers serve for two years in 59 developing nations in Latin America, Asia, Africa, the Caribbean, the South Pacific. During service, volunteers receive a generous living allowance, complete medical care, paid travel and training and a readjustment allowance of around $3,000 at the end of two years. Volunteers may be single or married without dependents. All volunteers must be American citizens

Ohio residents may obtain further information on Peace Corps by calling toll-free 1-800-521-8686. Persons in other areas should write ACTION, M-74 McNamara Federal Bldg., 477 Michigan Ave., Detroit, MI 48226.

BEE TALK

(Continued from page 28)

nothing wrong with that. But you will also find that you spend as much work on that one colony as you would normally spend on five or six, so you don't really end up ahead.

There is one thing basically different about raising comb honey, at least the way I do it, and that is, using colonies that are only one and a half stories high, rather than two stories; that is, the second story is a shallow extracting super, left there the year 'round, rather than a full-depth hive body. I find that with this arrangement the bees have plenty of room for winter stores, and also fill the comb supers up better. If the hives were two full stories, then too much of the summer honey would go into the upper story, rather than into the comb honey supers, and I'd end up trying to make a crop largely on the late flows. The smaller hive is ample for wintering, since all the late honey goes into it, and the bees don't need much of that space for brood rearing in the fall So they can fill it up with late honey. And honey, incidentally, is the best winter packing. You don't need to wrap heavy colonies — thus saving still more extra work. So it all works out about right.

How about queen excluders? I never use them any more and this past summer I didn't get a single trace of brood or pollen in any comb honey super. And here is the secret of that: Honey is itself a good queen excluder. That is to say, the queen will almost never cross up over a frame of honey, to lay eggs above. So if the top of the hive is pretty well filled with honey, as it should be, then the queen stays down below that, and you get no brood or pollen in the supers. And that is another reason for letting the bees have all the late honey for stores. Some of it is still there in the spring, in the top of the hive, to work like an excluder when you put those comb honey supers on, good and early, ahead of the honey flows.

I'm going to keep writing about this next time, with some suggestions for simple swarm control, marketing comb honey, and other things.

Readers with questions are asked to make them brief, and to enclose a stamped self-addressed envelope.

SUNFLOWER POLLINATION

THE KERNEL weight of bee-pollinated sunflowers is ten times greater than that of self-pollinated flowers.

MONTHLY HONEY REPORT

(Continued from page 6)

The last half of November was unseasonably cold in eastern Idaho. Bees have gone into winter in good condition. Colder weather in Montana and moisture levels below last year. Good snow cover needed.

Region 9

Retail honey sales seem to be holding up and prices advancing. Several large packers marketing honey in the northwest have dropped prices on some lines of honey. Bulk honey purchases are moderate due to uncertain economic conditions in view of advancing interest rates for financing additional purchases. Almond growers are actively seeking bee colonies for next year's almond pollination. Fee for colony rental running from $12.00 to $18.00. Honey imports are slow during October and November and lagging slightly behind last year.

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THE INTERNATIONAL BEE RESEARCH ASSOCIATION regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Consultant IBRA Representative for USA: J. Englhardt, 1500 Maywood Avenue, Ann Arbor, MI 48103. IBRA PUBLISHES: **Bee World**, a quarterly journal for the progressive beekeeper. **Apicultrual Abstracts**, a survey of scientitic literature from all languages. **Journal of Apiculture Research**, for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership $1. Specimen copy of **Bee World** $1.50; **Journal of Apicultural Research** $1.50; **Apicultural Abstracts** $2.00, from INTERNATIONAL BEE RESEARCH ASSOCIATION, Hill House, Gerrards Cross, Bucks. SL9 ONR, England.

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PACKAGE BEES. Pick up in St. Paul, Minnesota. Mid April. Now booking 1980 orders. Write for brochure. J. B. Apiaries, P.O Box 6626, St. Paul, Minn. 55106.

MARYLAND BEEKEEPERS (and adjacent states): Package Italian bees for pickup April 12-13 near Frederick, MD (queens fed Fumadil-B). 2-lb. pkg. $20.25; 3-lb. $24.25 $3.00 per pkg. books order. Ernie's Apiaries, 9933 Kelly Rd., Walkersville, MD 21793. 301-898-9746.

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1980 Italian Queens 1-24 $5.00; 25-99 $4.50; 100-up $4.00. Air mail ppd. Floyd's Apiaries, Rt. 1, Box 653, Deville, LA 71328, Phone 1-318-466-5289

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