

*Gleanings in*

MARCH 1979

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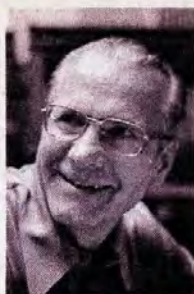
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## COVER STORY

The new American Honey Queen is Kim Arnevik from the Wisconsin Honey Producers. She attends the University of Rice Lake where she majors in dietetics.

# Gleanings in Bee Culture

March 1979

Vol. 107, No. 3

Created to Help Beekeepers Succeed

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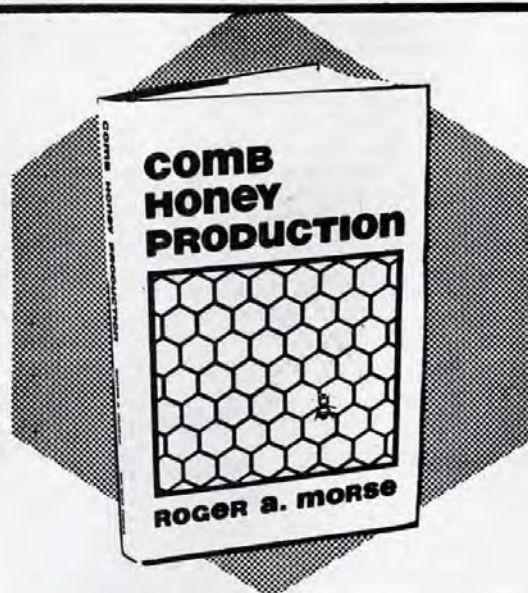
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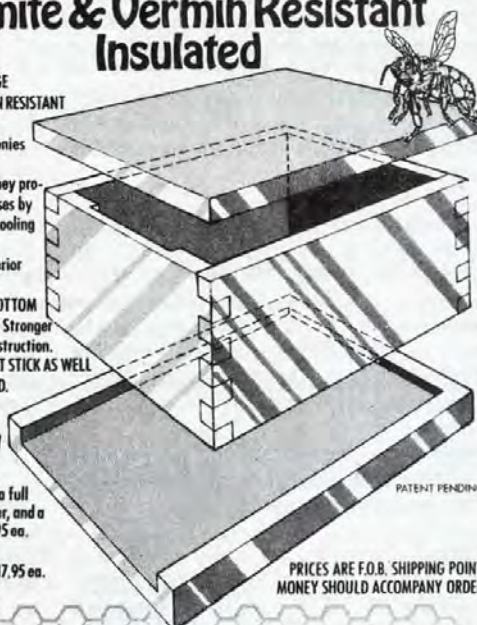
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# Monthly HONEY Report

LAWRENCE GOLTZ

March 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

## Reporting Regions

| In 60 Lb. Cans      | 1 | 2     | 3     | 4     | 5   | 6     | 7     | 8     | 9     |
|---------------------|---|-------|-------|-------|-----|-------|-------|-------|-------|
| White (per lb.)     |   | .57   | .51   | .47   | .50 | .50   | .49   | .45   | .48   |
| Amber (per lb.)     |   | .50   | .47   | .45   | .48 | .45   | .45   | .42   | .44   |
| 1 lb. jar (case 24) |   | 19.10 | 20.30 | 18.00 |     | 20.25 | 19.75 | 18.25 | 17.75 |
| 2 lb. jar (case 12) |   | 17.95 | 18.55 |       |     | 19.25 | 19.05 | 18.00 | 17.25 |

## Retail Extracted

|                |      |      |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|------|------|
| 8 oz. jar      |      | .62  | .70  | .62  | .72  | .60  | .59  | .63  | .70  |
| 1 lb. jar      | 1.39 | 1.01 | 1.13 | 1.05 | 1.17 | 1.04 | .97  | 1.06 | 1.09 |
| 2 lb. jar      |      | 2.10 | 2.12 | 1.92 | 2.25 | 1.89 | 1.97 | 2.03 | 2.10 |
| 3 lb. jar      | 3.75 | 2.70 | 3.16 |      | 3.25 | 3.01 |      | 3.03 | 3.09 |
| 4 lb. jar      |      | 3.79 |      | 3.49 |      |      |      |      |      |
| 5 lb. jar      | 5.50 | 4.20 | 4.72 |      |      | 4.58 | 4.30 | 4.99 | 5.15 |
| 16 oz. Comb    |      | 1.65 | 1.77 |      | 1.45 |      |      |      | 1.85 |
| 16 oz. creamed | 1.15 |      |      |      |      |      |      |      | 1.20 |

Beeswax — Light \$1.70 — Dark \$1.60

## Misc. Comments:

**Rhode Island**—Bees in fair condition.

**New York**—Bees in satisfactory condition. Cold and much snow.

**Pennsylvania**—Bees in fair condition. Moisture conditions good.

**New Jersey**—Bees seem to be wintering well. Honey selling well at wholesale. Retail honey sales down in January.

**Michigan**—Bulk honey may be in short supply by spring. Lack of good weather for cleansing flights may cause problems again this year.

**Ohio**—Bees wintering well. Honey market strong, wholesale prices up slightly.

**Indiana**—Bee clusters quite large, using stores rapidly during January. Feeding may be necessary. White honey supplies at wholesale very scarce in Indiana.

**Wisconsin**—Too early to report on condition of bees. Snow 30 inches deep. Retail honey sales good.

**Illinois**—Northern one-third of Illinois has had a hard winter with heavy accumulation of snow. Beekeepers are trying to get to outyards to check on stores. Packer demand for honey good.

**Minnesota**—Very cold during January and into February. Considerable snow on bees. Bees should be in fair to good



condition, but lack of warming spell may cause repeat of last winter's loss and weakened colonies. Honey sales good at retail.

**Nebraska**—Good demand for honey. Bee loss may be heavy. Extremely cold winter. Travel very difficult in state.

**Virginia**—Weather cold but bees in good to fair condition. Some satisfactory cleansing flight days. Honey sales good. New beekeepers planning an increase in colonies.

**North Carolina**—Bees in good condition due to milder weather through Christmas. January cold, but bees have had flights. Colony stores are good. Honey sales good in retail stores.

**Florida**—Orange honey flow due to begin about first of March.

**West Virginia**—Bees in good condition. Good flight days in December, but none in January.

**Kentucky**—A cold January. Bees received only two days for brief cleansing flights. A warm February could prevent this from being the third consecutive hard winter for bees. Honey sales down slightly.

**Tennessee**—Bees wintering well but need some warm weather for cleansing flights. Some feeding will be necessary for early build up. Honey sales have been good.

**Alabama**—Bees generally in good to fair condition statewide. Early feeding of some apiaries has begun.

**Oklahoma**—Had a break in weather in January and bees had good cleansing flight. May require some feeding later in winter. Very small amount of local honey left on market.

**Arkansas**—Brood rearing delayed. It appears that we will have a spring like 1978. Flea markets in Arkansas have adulterated honey for sale out of Mississippi. Packers beginning to worry about honey from southern hemisphere. Price of honey to packer may be going up.

**Texas**—Bees in good shape. Recent rains are providing needed moisture for early Agarita bloom in March. Honey sales steady. Fastest seller is the 5 pound jar.

**Montana**—Bitter cold, deep snow. Strong winds have kept bees confined. A

(Continued on pg. 148)



# Book Review

**Honeybee Pests, Predators and Diseases**, edited by Dr. Roger A. Morse, Professor of Apiculture, Cornell University, Ithaca, New York; 432 pages, special pre-publication price \$27.50. Cornell University Press, 124 Roberts Place, Ithaca, N.Y. 14850.

In this well-documented book—the first of its kind—sixteen authorities representing a number of disciplines study all the known threats to the life and health of the honeybee.

Subjects included are: the most advanced methods of disease detection and treatment; recommendations as to exact dosages and procedures making the most effective use of modern drugs and antibiotics; three papers dealing with abnormalities and non-infectious diseases; poisoning by plants and antibiotic systems in honey, nectar and pollen; bee disease laws in the United States and Canada; plus information on a broad spectrum of other insects and organisms of concern to entomologists by authors well known in the sciences related to beekeeping.

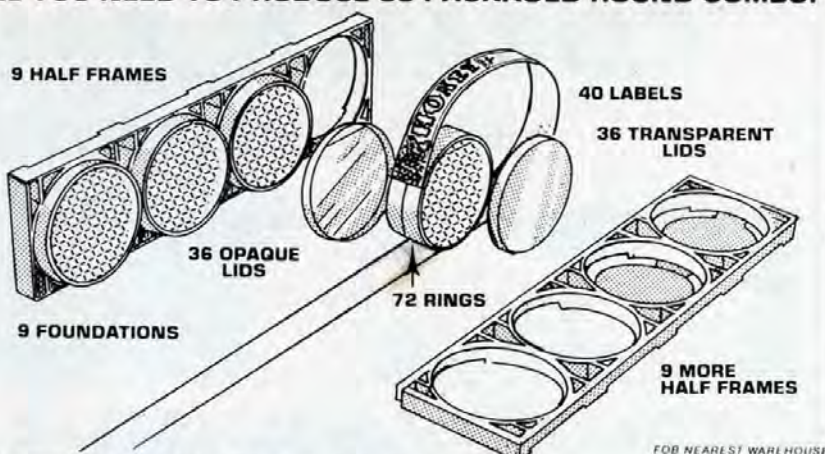
The book has fifty black and white photographs. Recommended to all beekeepers, those active in teaching, research, extension or regulatory work involving honeybees.

**The Least Is Best Pesticide Strategy** by Jerome Goldstein, 205 pages, soft cover \$6.95. The J.G. Press, Inc., Box 351, Emmaus, PA 18049. A change of thinking is taking place in regard to the application of pest control methods. At least that is the central theme of this book on Integrated Pest Management (IPM). The key components of IPM are biological, cultural, physical and genetic controls with heavy emphasis on monitoring pest populations. Instead of using chemical treatment as a first line of crop protection, insurance chemicals drop way down on the list; applied only when necessary to prevent economically important damage to the crop.

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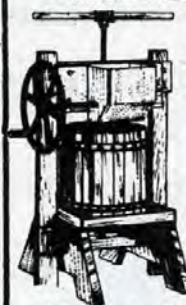


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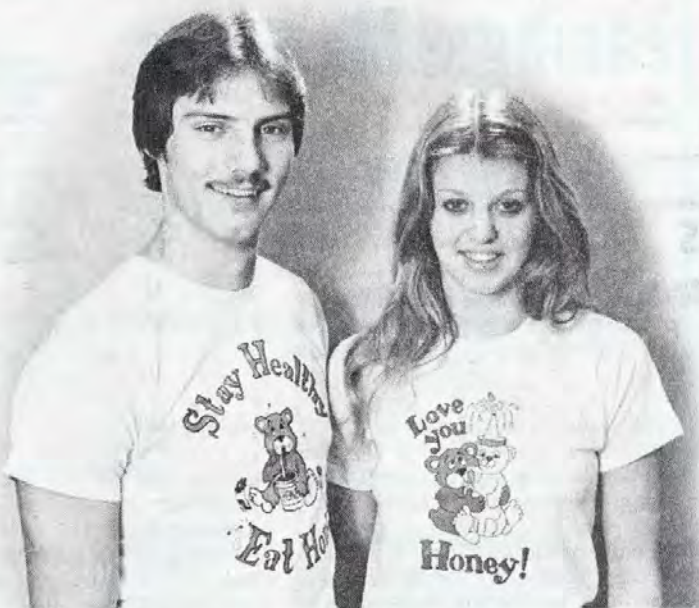


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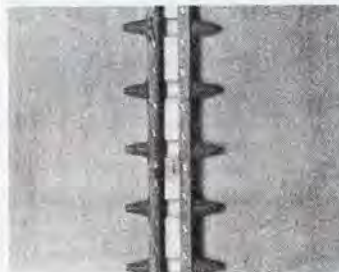
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## Gleanings Mail Box

Dear Editor:

I would like to suggest a rebuttal to Charles Koover's advocacy of eleven frames in a 10 frame hive (December 1978).

As a case in point I just talked a beekeeper going up to 300 hives out of the notion of making the 1-1/4 inch top bar frames.

I tried eleven 1-1/4 inch frames in several 10 frame jumbo hives. I had the honey combs drawn out in five frame nucs. Then I put them in a hive and of course the bees wanted drones so they made some. When you remove frames you peel off the heads of the drones, roll and crush bees and could easily kill a queen. So I put in a follower board. That is a solution, but few people want to make or use follower boards.

If bees make drone cells on a comb in 1-1/4 inch top bar frames they have to

remove part of the cells on the adjacent frame and you will find that they will remove wax right down to the midrib. This is a loss of brood rearing space.

Now I know Langstroth knew best.—Roy Thurber, Kirkland, WA.

Dear Editor:

An article in one of the competing beekeeping publications gives a **post mortum** of thirteen (13) separate bills which died in committee in both houses of Congress. Perhaps the most important was HR 10201 introduced by Representative Larry Pressler (R.SD) which would have given honey producers price support. To my surprise, my representative had introduced favorable legislation of which I and many other beekeepers in this state were unaware.

The point is that the greater majority of the beekeepers are not being made aware of legislation which could effect us. Worse is the fact that the constituents of the members of the Senate Committee on Agriculture and Forestry and the House Agriculture Committee probably did not know of proposed legislation which they could have affirmatively influenced by writing to their Senators and/or Representatives. It appears to me that there is a need for timely publication of pending legislation before Congress and even editorial comments encouraging beekeepers to write to their elected representatives to influence favorable legislation. Perhaps with a more informed beekeeping public we may squeak loud enough to get our wheel a little of the grease.—Tom Hooker, Garnett, N.C.

Dear Editor:

I envy you people being able to handle your bees with the minimum of paraphernalia. We have to put on over our normal clothes, white coveralls with elastic bands at the end of the arms and legs, plus veil, hat and gloves with extension pieces up the arms. Otherwise we are in for a bad time.

The bees I am dealing with, of course, are the *Apis mellifera adansonii* though I maintain breeds other than *A.m. carpensis* and *A.m. adansonii*.

We have a few beekeepers with over 800 hives but not many; even those are now curtailed due to the present position of the country. I was astounded at reading of the apiary for sale in Texas of somewhere around 15,000 colonies. It's mind boggling, but of course have always heard that Texans do everything on a super colossal scale!

We here have to normally keep our hives in bee houses, so the outlay is quite considerable. We have several kinds of predators and of course we have wax moths and hive beetles. Thank goodness, at the moment we don't have EFB, AFB or Nosema.—G.N.G. Reid, Mashhaba, Rhodesia, Africa.

Dear Editor:

I have the solution for R.B., Illinois on how to eliminate the unfilled portion of comb above the excluder in the center of the hive.

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(Continued on pg. 145)





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# Three Honeybee Topics

By GRANT D. MORSE, PH.D.  
Saugerties, N.Y.

## Supersedure

WHAT PART does supersedure play in swarming? The common belief is that it plays a minor part. But there are exceptions.

Supersedure is commonly defined as the act of a colony of honeybees of replacing a failing (or lost) queen with a new one, usually without intent of swarming. A colony does not ordinarily replace a queen unless she fails to produce brood in acceptable quantity during seasons of the year when it is needed.

Whether the workers quickly perceive such a failure on the part of the queen is not fully known. It is believed, however, that such failure is accompanied by a marked falling off in her secretion of the various elements which constitute queen substance.

Since honeybees have limitations on their mental processes, Nature accordingly provides a physical signal to which they are stimulated to react.

Frequently, however, swarming does follow from supersedure. It does so when the signals that normally trigger the swarming impulse are present. Those would include the presence in the nest of an acceptable quantity of brood, young bees, some stores, a rather crowded brood nest, and a nectar flow either in progress or impending.

But these conditions are not too often present in toto when supersedure occurs. They are commonly absent because, in the majority of cases, the queen must have definitely exhibited evidence of normal egg laying deficiency, accompanied by a decline in her secretion of queen substance. Often, by the time this is recognized by the workers, and acted upon by them, the promise of enough brood in the nest to encourage swarming is compromised. But in instances in which the colony makes the decision to supersede the queen while there is a goodly quantity of brood in the nest, all the essential factors to trigger swarming may be present. Or in cases where the factors that normally contribute to swarming are present at the time when one or more of the new superseding queens is hatched and mated, swarming may occur. On the other side of the picture, we know from research that in many cases when new queens are produced, either under the swarming impulse, or under supersedure, swarming does not take place. Presumably, when this is true, one of the essentials to

successful swarming is absent—and the workers are aware of it. After all, they are playing with the life of their unit.

Timing is one of the key elements in determining whether swarming will occur concurrently with supersedure. Although only supersedure may have been planned—or proceeded toward—if all elements encourage swarming, the colony is likely to respond favorably.

Colonies are much more likely to supersede a queen that is two or more years old than one that is younger. Interestingly, swarms after reaching the new nest do not usually supersede their queens during the same season in which they swarmed.

To some degree it is possible to distinguish superseding queen cells from swarm cells by the fact that the superseding cells are usually fewer in number—usually not more than six; more often not more than three. Sometimes, only one. Part of the reason for this practice may lie in the fact that superseding calls for only one good queen. A swarming situation may call for two or three.

It is doubtless a wise provision of Nature which often permits a superseding queen to remain in the nest and active, even if on a reduced level of production. The reason is obvious when we realize that approximately seven weeks must elapse between the time of laying the egg that eventually becomes a superseding queen, and the birth of the first bee from an egg laid by that queen.

If the older and failing queen can be permitted to continue to lay during this seven week period, or some considerable part of it, even if on a reduced level, she may be able to keep the colony numbers from dwindling drastically. This fact is the more obvious when we stop to think that 49 days is as much or more than the typical worker in the colony, at the moment the bees decide to supersede their queen, is likely to live.

The situation in the old nest from which a swarm issues is not much better in terms of the waiting period before new brood becomes available.

As many beekeepers know from finding two queens present in the same hive, and tolerating each other's presence and activity, a superseding queen does not often promptly eliminate her predecessor (her mother). Probably this tolerance on

the part of the younger queen is not due to sentiment, love of mother, or maternal affection. Doubtless, it is instead an instinctual reaction.

Incidentally, we know that in some emergency situations the new superseding queen is produced, not from a preconstructed queen cell, but from a post constructed cell, an enlargement of a worker cell on the side of a comb.

Queen breeders are rather much agreed that a worker larva up to the age of two days may be properly eligible as a candidate to become a royal personage (as Langstroth might say). But 3-1/2 days into the larval stage is just about the limit of age for a worker larva to be transformed into a queen. A worker egg normally lives for three days prior to the larval stage. Since the larval stage is normally five days, a worker larva 3-1/2 days old has been feeding for that length of time on worker food, rather than on the royal jelly and other queen nutriment needed to effect her transformation. Hence, such candidates do not always become very good queens.

## An Experience with a Bait Hive

I've caught several swarms of bees in bait boxes. But let me tell you of one swarm that I did not capture.

The back of my residential property here in the North features a small grove of trees, about a dozen. They're rather small and contain no cavities that could house a colony of bees. One of these trees has an old stump located next to it. On this stump, about four feet above the ground, I placed a bait box of regular Langstroth dimensions. I sealed its top and sides with tape, and reduced the entrance with a standard cleat. Inside I had placed an old frame of comb.

On the 19th of June, before noon, I observed two honeybees investigating the box. They would go in and out, fly in front of the entrance, then go inside and remain for indefinite periods that varied in length from ten seconds to several minutes.

On the third day there were six bees carrying on the inspection of the bait quarters. But on subsequent days I never saw more than two there at any one time. Nevertheless, there were two scouts present every time during the days that I observed the location.



These visits continued for seven days, then the scouts ceased coming altogether. Why did these explorations fail to bring a swarm to the bait box?

No one can tell for sure. Here are some possibilities. Other scouts from the same nest may have found a more attractive site. Or, when the swarm issued it may have been hived by its owner. Or the owner may have taken some swarm prevention measures.

What are some of the factors in this case that may have militated against the bait box's acceptance? There was not much flight area in front of the hive, that is, between the hive and the adjacent trees. The front of the box was shaded part of the day, and a bit shaded most of the day. Its elevation was perhaps not so great as bees normally prefer (10 to 20 ft.).

There were seldom more than two scouts present at one time, though the ones seen came early in the morning, and were seen as late as 20 minutes of eight in the evening DST. Of course the two scouts seen each day may not have been the same ones each time. If this box had proven to be the eventual selection of the potential swarm, it is likely that I should have been able to observe a relatively large number of scouts present at some time during the seven day period. This has been true in cases where swarms have actually entered my bait boxes.

What can one do to increase the likelihood of a swarm's taking over a bait box? Give it, preferably, a southern exposure. Use bait boxes no smaller than a standard size Langstroth hive body. Locate the box, desirably, on the southern side of a good sized tree, and at an elevation of at least twelve feet. Provide no more than one entrance—its total diameter being too small to admit a mouse. Place it where there is good flight space in front of the entrance. One need not use bait comb, but it does no harm to do so unless there is honey or pollen in the comb which may become an attractant to ants whose presence discourages acceptance of the cavity by the scouts.

Fix the box rigidly to a firm object, for example the trunk of a tree. Avoid admission of light to the box except through the entrance. Do not place the box in the vicinity of viable colonies (swarms prefer freedom from foraging competitors).

Inspect periodically for the potential presence in the box of ants, mice, wasp nests, spiders, or other living objects.

It is desirable to visit the box frequently enough to prevent a swarm's taking over quarters there and building extensive comb which then becomes largely useless.

This forenoon I went again to examine the box and its environment. I observed again that during a good part of the day it

is shaded. Bees like a bit of sunshine at the front of their nest, judging by their usual choices.

Significantly, however, they seem to overlook almost nothing among their instinctual specifications. Within fifteen feet of this bait box I had placed at the same time a five-frame nucleus box in a location where plenty of sunlight, and of flight space in front of the entrance, were present. The scout bees did not frequent it. I doubt if they had failed to inspect it but I observed not a single scout there at any time. I do not deceive myself into concluding that a scout bee does not have the capability of estimating the volume of various available cavities. How do they do it? Among other ways, they walk over the sides of the cavity and in some subtle manner, not yet fully revealed, are able to come to a conclusion as to whether it is as large as the one they are used to.

### L. L. Langstroth

I have just been reading America's Master of Bee Culture, *The Life of L.L. Langstroth* by Florence Naile with a new forward by Roger A. Morse. (1976).

In 1851 Langstroth became the Father of Beekeeping in the world because of his discovery of the principle of bee space. This discovery was that honeybees operate in the nest on the basis of maintaining a distance between the working areas of the nest—between the combs, and between the combs and the interior sides of the nest cavity—of approximately 3/8ths. of an inch.

Prior to Langstroth's discovery it had been necessary to cut comb out of a nest in order to secure liquid honey. As soon as the principle of bee space became apparent to Langstroth, he realized that a movable frame in the hive with a bee space of 3/8ths. in. provided above, and on all sides of a frame, would enable the beekeeper to remove and replace combs of brood and honey at will.

Rather promptly Langstroth took out a patent on his hive and the use of a movable frame. One might think that he would have profited financially from such a significant discovery. But the application of his principle of bee space was so easily duplicated that many manufactured their own bee-space equipment. Some competing manufacturers to whom he had not issued permission to construct hives according to his specifications took advantage of his perhaps-inadequately-worded patent in order to avoid paying him a royalty. Others claimed his idea was not new.

No one has ever demonstrated that any predecessor of his had anticipated his discovery of the principle of bee space, or had actually employed all of its features.

Because of a physical illness that had afflicted him periodically for years, plus his failure to capitalize on his invention of

the Langstroth hive, and of the movable frame, his later years were ones of relative poverty during which he was largely dependent upon the charity of his brothers-in-law.

Many modern beekeepers experience financial inadequacy. Part of this, I suspect, is due to the vagaries and uncertainties of the vocation such as unfavorable weather, changes in available nectar sources, and so on. Part of it is due to the lack of good financial planning, and of consequent overspending.

Fundamentally, beekeepers are not particularly different from those in other callings. Many people fail financially. Part of this may be traceable to the fact that, except through imitation of successful acquaintances and operators, most of us are almost totally novices in finance. Our parents may in some cases not have been outstanding successes in this field. Thus our financial attitudes are so often acquired through trial and error.

So often many of us fall heir to the theory—the one unfortunately practiced usually by many branches of government—of overspending. This is done in the hope that all will turn out well despite what is a chancy and dangerous venture-someness.

I have talked with many people, both in and out of beekeeping, about this practice. The people that have succeeded the best, and who have constantly enjoyed the greatest peace of mind, have been those who did not venture at any one time more than could be corrected if adversity came.

Most of today's successful beekeepers began their careers conservatively, and expanded their operations only as fast as one success gave promise of another. Many carried on other work concurrently.

Many of these people have told me privately that they have always maintained an emergency balance in their financial operations. Such a balance was kept intact as a hedge against reverses. These folks have assured me that the peace of mind that was theirs, as a result of maintaining a modest balance of funds to which they could turn in an emergency, was worth every effort exerted on their part.

Some people, both those in beekeeping and those outside, have known this peace of mind. Many never will. They subscribe to the reckless practice of spending their last cent, and in some cases borrowing on top of this. Some succeed at it. Too many fail. And the most damaging part of their failure is the loss of peace of mind that could be theirs with the maintenance of a moderate balance at all times.



# The ABF Meeting In California

By **JOHN ROOT**  
Medina, Ohio

THE PROMISE of warmer weather drew many almost snowbound Northern beekeepers to sometimes sunny and warm San Diego, California, the site of this year's American Beekeeping Federation's Convention. There was some rain but most occurred at night and the high temperature usually approached 70°, making the many planned excursions an extra special memory of the time spent in San Diego.

The city is very picturesque with its hills and mountainous background. The view from the Sheraton Harbor Island Hotel was breathtaking, looking out over the harbor.

The Thursday morning session offered a number of speakers on the subject of bee venom. William Shipman, a biochemist for the U.S. Navy in San Diego, discussed the chemistry of bee venom. He plotted the major ingredients of bee venom; such components with big names as Phospholipase A, the allergic portion of the bee sting which turns lephesine into a poison which destroys red blood cells; Melittine, which makes up 80% of the venom, a strong detergent with a positive electrical charge which draws itself to body cells helping the venom to permeate the tissue. He also explained the processes of arthritis and how bee venom might function to reverse the process of the disease by cleansing the surrounding cells of an enzyme which causes the joint deterioration and inflammation.



The newly elected officers of the Federation are (left to right) Binford Weaver, vice president; G.C. Walker, president; Frank Robinson, secretary treasurer; and David Sundberg, HIC representative.



A black and white photo really doesn't do justice to the beautiful view from the Sheraton Harbor Island Hotel in San Diego site of this year's convention.

Dr. Ross Nielson of the USDA Research Lab, Baton Rouge, Louisiana, was not able to attend but Frank Randle, Alabama State Apiarist, gave a report of his work on control of the wax moth in which wax moths are irradiated with gamma radiation causing a system of random mutation which results in offspring that are less fit to cope with the rigors of survival because they're deformed in some way.

Thursday afternoon Dr. Harvey Cromroy of the University of Florida showed a series of slides on the mite *Varroa jacobsonii* which feeds on developing larvae causing them to be deformed and in extreme cases, to die. The mites, which are large enough to be seen without a microscope, originated in Asia where they cause so much damage, it is very difficult to produce a crop. The beekeeping world has been shocked by the rapid spread of the mites into Europe, Africa and South America probably due to the carelessness of beekeepers bringing stock from Asia. Several fumigants have been tried but at the moment there's no effective control measure available. Once a chemical solution is found, the testing involved in applying for a pesticide registration through EPA could take years.

On Thursday evening, at the Queen's Coronation and Dinner, twelve queen candidates vied for the title of American Honey Queen. During the year JoAnne Weber, chairman of the American Honey Queen Committee, does a great job of getting the most honey promotion possible out of her limited budget. The states competing this year were Idaho, Kansas, Minnesota, California, Florida, Tennessee, Texas, Wisconsin, Nebraska, South Dakota, Michigan and Ohio. Kim Arnevik representing the Wisconsin Honey Producers was the one crowned. She attends the University of Rice Lake where she majors in dietetics. She's the daughter of Mr. and Mrs. Ray Arnevik. Contributions to the Queen Fund for

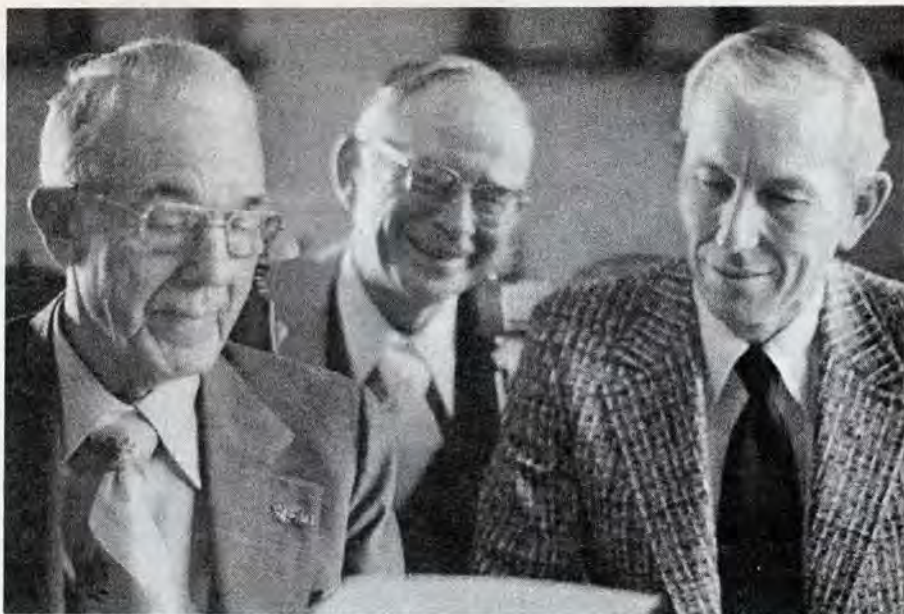


honey promotion can be sent to the new Federation address—13637 N.W. 39th Ave., Gainesville, FL. 32601.

The next day the business session started off with a financial report. Bob Banker, outgoing secretary-treasurer, reported the Federation in sound financial condition. Income from memberships totaled \$52,590, up 9% from last year; cash and certificates on hand amount to \$59,000. In addition, the treasury holds \$73,184 in the honey defense fund used for research and legal counsel in problem areas such as honey adulteration. The total assets amount to \$141,690, up 15% from last year. Owner's equity is now \$56,906, up 26% from last year. Net income for the year 1978 was \$11,766, an increase of 47% compared to 1977.

The usual number of resolutions were submitted. The first three: thank the hotel, the local arrangements committee, the speakers, and JoAnne Weber and her Honey Queen Committee. Resolution No. 4 was a repeat from last year which dealt with the problem of Dr. White's retirement and the question of future funding for honey research at the Eastern Regional Research Laboratory in Philadelphia. This resolution asked that the USDA reinstate a viable research problem on honey.

No. 5 was also a repeat asking the US Postal Service to reinstate the practice of insuring packages anywhere in the continental United States and accepting them for airmail shipment.



Newly elected Honey Industry Council President Donald Schmidt goes over old business with Leslie Little sec.treas. (left) and Howard Foster outgoing president. Also elected was Charles Adams of Superior Honey as vice president.

No. 6 again directed the officers to continue work with utmost urgency toward obtaining import quotas and/or duties on honey.

No. 7, another rerun asks the USDA to raise the rate of reimbursement for pesticide losses provided by the indemni-

fication law to compensate for inflated costs.

Resolution No. 8 as last year recognized the fact that the indemnification law was drawn up prior to the marketing of encapsulated pesticides. The Federation thus urges the Secretary of Agriculture to change the regulations on inspection to take into account the continued kill caused by the new encapsulated pesticides. Since this type of pesticide is very fine granules similar to pollen, bees are apt to store it in the combs which would require a more extensive inspection.

Resolution No. 9 is a repeat from last year asking the ASCS office to extend the early cut-off date of October 1 to December 1 because many areas of the country have continued bee activity after that date.

Resolution No. 10, also passed last year, asked apiary inspectors to urge the feeding of Fumidil-B by queen and package bee producers and their customers.

Resolution No. 11 again asked government agencies to refrain from encouraging supporting or participating in programs that would control or eradicate valuable bee foliage plants in the United States.

Resolution No. 12 reaffirms that beekeepers should be circumspect in their use of the indemnification program because there have been some allegations of abuses.

Resolution No. 13, a perennial request for lower interest rates on loans and a higher percentage of parity on purchases for the Federal Honey Loan and Purchase



The queen and her court. Left to right second runner up Karen Sue Marry, from Michigan, American Honey Queen, Kim Arnevik from Wisconsin, American Honey Princess and Miss Cordiality Janice Walker from Texas.



Program, however, this year there was a change from the usual requested 90% of parity. After discussion this was changed to 75% of parity since parity is now 66.8 cents per pound, 90% would be 60.1 cents per pound and 75% would be .50 cents per pound.

Resolution No. 14 again asked that highway departments not cut roadsides lower than 6 inches, no further from the road than 10 feet, and use honey plants for ground cover.

Resolution No. 15 repeated a similar request for set-aside acreage plantings asking that legumes be planted on this acreage.

Resolution No. 16 acknowledged the work being done to produce genetic alterations of the wax moth by irradiation techniques and requests that the USDA continue and expand necessary testing to determine the effectiveness and practicality of such techniques in large areas under field conditions.

Resolution No. 17 notes the fact that sulfathiazole has been removed by the Food and Drug Administration from the list of drugs that can be used for control of bee diseases and requests that the Agricultural Bee Bio/Environmental Laboratory in Beltsville, Maryland, develop the data packages required to obtain the registration for sulfathiazole as well as any other work necessary to prevent other drugs or chemicals from being removed for beekeeping use.

Resolution No. 18 asks the Environmental Protection Agency to consider the potential danger to bees in making decisions on labeling pesticides.

Resolution No. 19 asks the Agriculture Research Service to institute and pursue an urgent program of research to determine whether there is a threat of infant botulism from honey fed to infants and eliminate the danger if one exists.

Resolution No. 20 voices concern over

the fact the the Carl B. Hayden Bee Research Center in Tucson is being used for administrative offices and programs not related to beekeeping.

Resolution No. 21 thanks the National Broadcasting Company and Frank Burkholder for the coverage they gave bee venom arthritis therapy.

Resolution No. 22, along the same vein, recognizes the late Glen B. Warren and his family for their leadership and technical assistance in bringing bee venom therapy to the attention of the public and the medical profession.

Resolution No. 23 came from the floor



After many years of service to the American Beekeeping Federation having served in every capacity but recently and longest as secretary treasurer Bob Banker and his wife Bernette have retired from office to take life easier and have time to enjoy future ABF conventions.

and asked that the officers actively pursue a honey promotional national mandate program.

Correspondence reported after the resolutions noted the fact that payments made under the 1977 indemnification program totaled 4.4 million dollars. The applications totaled 1,800 compared with 1,200 in 1976. Through the end of the year 700 beekeepers have paid 1.3 million dollars in the '77 program.

Gene Killion, Illinois State Apiarist, who has been pursuing a campaign to get a honeybee commemorative postage stamp has urged beekeepers over the country to write the Governor of their state asking that he write a letter of support for such a stamp to the Postal Service Office of Commemorative Stamps.

In the discussion on old business Jim Powers explained his concern about the future of the beekeeping industry if more can't be done to stop the adulteration of honey with cheap high fructose syrups. He gave examples of a number of packers who have already had to discontinue business when faced with this low-priced competition. In three cases honey has been seized by the FDA but the fines that will probably result will not be a sufficient deterrent but once a conviction is obtained, local competitors who have been affected will no doubt contact their attorney to bring a civil suit for damages.

Cassette tape recordings were made of all speakers on the program by Convention Recorders, Box 23415, San Diego, CA. 92123. Cassettes can be obtained by sending \$6.00 for each plus \$1.00 for postage and handling. California residents add 6% sales tax.

The 1980 convention will be held in Detroit, Michigan. Although it will not be as warm a site as previous conventions, the people in Michigan tell us they have a lot of fun in the snow and they're looking forward to a good crowd that will join them.

## The Lady Back -Yard Beekeeper

"WE HAVE A HOUSE AND 20 ACRES IN ROBERT, LA. WHICH IS 'ACROSS THE LAKE' (PONCHARTARIN) WHERE WE BROUGHT THE BEES A FEW YEARS AGO."

By SERENA LUNT  
Robert, LA.

DO YOU KNOW the methods used by most lady beekeepers when taking off the honey crop?

Having checked with others, I find that I am not the only one using wheelbarrows

to take the combs to the honey house, which often as not, is the kitchen! First I line the wheelbarrow with a plastic tablecloth so that any honey spilling from the broken brace and burr combs can be gathered.

I cannot say that all the ladies do as I do when taking off the combs, which are heavy when one uses eight frames to the super even though it is a shallow super. I would not be able to lift out a deep frame.

After smoking down the bees, I take each frame out, brush off the bees and

place it in the wheelbarrow. I then remove that empty super and place it in the other wheelbarrow. I continue this process until I have taken off all the supers. And, you cannot imagine the number of bees I have brushed off those frames onto the brood chamber or in front of it. And they seem so confused, poor things

Now place a sheet of aluminum foil tightly on top of the brood chamber. The cover is put back on and I race away with my wheelbarrows loaded with that golden honey, and waxen treasures to the honey



house. This is the only heavy work involved.

Bring the empty supers into the honey house because as I spin out the honey I place the empty frames into their own supers. The supers are on another plastic-covered surface, the table next to the extractor.



(Above) Serena extracting honey with what she calls "her ancient extractor".

(Left) Serena Lunt with her bees.

Next morning I put my load of supers back onto the wheelbarrows and bring them back to the hive stands. After smoking the bees I quickly place their lightweight empty supers back on the brood chambers. I get back into the house before the effects of the smoke wears off, first taping cracks between

supers.

There is a limit to how much work an old girl (born 1906) can do in one day. I have three lovely colonies and take care of gathering the honey from one each week. I usually get 90 pounds of honey from each in June. I open them up again in September and take all of the honey but

the one super above the brood chamber. I always have customers waiting.

Robert, Louisiana is in Tangipahoa Parish, 10 miles east of Hammond, land of strawberries, blackberries, mayhaws, crabapples, wild plum and sweet pepper farms. June honey is a real treasure.

# How To Flower Young Trees For Nectar

"I never wait for a tree to bloom, I make it bloom!"

By BERNIE HAYES  
Wellsville, N.Y.

SOME YEARS AGO, when I first became interested in artificial bee pasturage, I realized that the main obstacle in this field was the negative resistance to the idea since most any tree species takes, it seems, a long time before they flower and the bees benefit.

However, I then knew, from my previous fruit orchard experience and extensive reading that Nature gives hints how this early flowering may be produced for it is a natural event in such apple varieties as the Idared and Cortland. For example, a simple bending of upright growth to horizontal form stimulates flower bud formation or withholding nitrogen fertilizer does this as well.

At one time, horticultural authorities

would recommend "scoring" or "ringing" of late flowering fruit trees, especially the Northern Spy which would often only flower after eight to ten years on standard rootstock. (Early flowering is no longer a horticulture problem with dwarf rootstocks being common.) Scoring is done in mid-June when the bark slips readily from the wood. To do this, a knife cut is made entirely around the trunk, or limb, and only deep enough to cut thru the bark and touch the wood. This method was the one most commonly recommended for early flowering but an improved variation of this technique has been pointed out to me and which I will explain in this article.

However during the time I have had this flowering problem "on the back



burner" I fortunately received a most interesting letter from a Missouri orchard man, Clyde W. McGuire, who operates 35-40 colonies on section comb honey in Oregon, Mo.

I give you below Clyde's instructions for early flowering.

"I am also an orchard man and I will tell you how to make your Sourwood tree, or any other tree such as fruit, nut, etc. bloom. It is a little secret I learned a long time ago and in fact I never wait for a tree to get old enough to bloom, I make it bloom!. The big secret is the timing.

Here in N.W. Missouri, between June 10 and 20th, when a tree has grown four years, I take my sharp knife and remove a chunk of bark from the north side of the tree and discard it. I make a perpendicular cut one-half inch wide by three inches tall, about four inches from the ground. Cut thru the outer bark and thru the cambium for the bark will slip easily at this time. After making the cut, take the point of your knife and remove the bark piece which you throw away.

This little trick will cause the tree to set fruit buds and it will bloom the following year and it generally has to be done only once for once the tree starts blooming it will continue to set fruit buds every year. Here in N.W. Missouri sometimes the

peach bloom buds get killed and minus 15 degrees F. will usually wipe out a peach crop for the following season.

This trick will also work on an individual limb of a tree. In other words, you can cause one certain limb to bloom and not the other. Your timing might be a little later than mid-June, you might check with your experiment station on that."

Clyde has further interesting comments typical of a beekeeper considering setting out trees, in this case the Sourwood.

"I live in the extreme northwest section of Missouri and our winters usually get rather cold, -15 (-20 one year in 20) and -25 or -30 one year out of 30-40. I am sixty-five years old and have had -30 twice that I can remember so I am wondering if the Sourwood will survive our winters?"

I wrote Clyde that my seedling Sourwood trees were about five foot tall and had been thru minus 20 degrees with no harm at all. In fact, the two worst winters here in memory, on the Allegheny plateau, at 1,500 foot elevation.

The USDA Yearbook for 1961 confirms this treatment for flowering (or seed production) p. 230, as follows:

"Stem injury, which retards the normal

phloem transport of organic food substances, stimulates production of seed of a number of forest trees. Stems may be girdled or banded. A girdle is made by removing a strip of bark and cambium in two semi-circles or a spiral around the tree. Evergreens have yielded two to three times a normal crop after they were girdled."

In substance, we now have a simple and effective means to make any tree species flower that normally flowers, when we wish it to do so. This is especially important to alter such fast growing, late flowering varieties as the Tulip Poplar, Pagoda (*Sophora japonica*) and others.

As for the timing, from one that has done considerable grafting, it is advisable to make two small testing cuts in the form of an "L" then with the point of the knife try and raise the bark corner up from the wood. If it sticks, it is either too early, or too late, but usually the former. When it slips easily from the wood underneath it is time to make the full 1/2 x 3 inch cut.

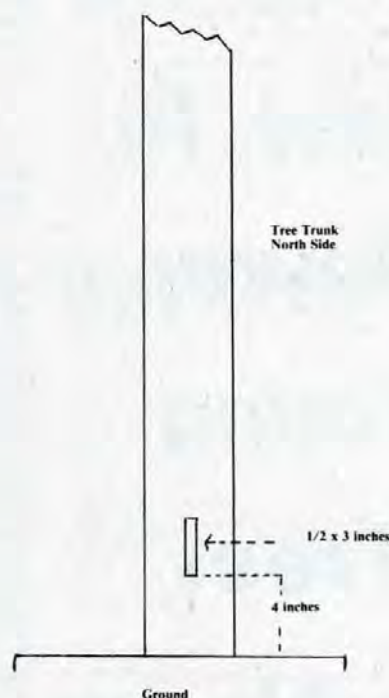
Last summer I treated a Sourwood and two peach trees—it will be interesting to see the result this spring. The cuts have healed completely over by October.

Apiculture moves forward with men like Clyde McGuire.



A "flowering" peach can be induced to bloom by this method.

CLYDE MCGUIRE METHOD OF INDUCING EARLY FLOWERING





# Honey Plants

By LARRY GOLTZ  
Medina, Ohio

## PART III

THERE IS usually an effort made to define the difference between what we refer to as cultivated plants and those which grow spontaneously wherever the opportunity exists. In most instances plants such as white Dutch clover which grows in pastures and lawns should be considered as a cultivated crop although it may become established without any effort on the part of the land owner except possibly for lime, fertilizer and continuous mowing or grazing. Many plants can therefore be classed as either "cultivated" or "wild" depending upon the circumstances under which they are growing. Sunflowers, for example grown purposely for the oil seed crop may yield quantities of nectar for bees but when a smattering of sunflowers appear in the corn field the following year they may be classed as "wild" or weeds but none-the-less available and valuable to bees as nectar plants—at least to the extent that they occur. True "wild" plants, if there be such a classification, are generally found outside the boundaries of cultivated land although here again we are pressed to say that any plant "out-of-place", so to speak, on cultivated ground is also likely to be called "wild" or commonly, a "weed".

### Pasture or Hay Crops

Pasture and hay forage plants include the legumes, principally the clovers, and various grasses. Members of the grass family are of little interest to the beekeeper since they yield no nectar and little available pollen to the honeybee.

Cropping practices in present-day agriculture has changed considerably causing many pasture and forage crop acreages to be used for row crops such as corn and soybeans. This trend is particularly noticeable in the middle eastern and middle western states. In the South soybeans have become a major crop. While corn may yield some pollen to bees it furnishes no nectar. Comparatively little research has been directed toward determining under what conditions or by what varieties nectar is secreted by soybeans, but more is planned.

Proper seedbed preparation is very important prior to seeding forages. Soil preparation begins usually with plowing, disking and harrowing. If soil tests



Yellow Sweet Clover

indicate the need for lime and fertilizer these materials should be applied prior to seeding. Legumes achieve their best growth on slightly alkaline soils; liming also increases the availability of other plant nutrients to the seedlings, particularly phosphorus. Fertilizers which are high in phosphorus, low in nitrogen and with small amounts of potash are recommended for starting forage seedlings. When legume seed is sown along with a companion crop by grain drill the fertilizer is usually placed in a band under the legume seed using a band seeding attachment on the grass seeder. A thin layer of soil separates the bands of seed and fertilizer.

Forage crop seedings are sometimes made with companion crops such as wheat or oats. Where winter wheat is grown a legume-grass mixture is often broadcast into the wheat in late winter while the soil is still subject to frost, thus furnishing a light covering through the freezing and melting of the soil surface. Often the wheat or oats into which the seeding is made is allowed to mature and is harvested as a grain crop. This method of companion cropping with grain forces the legume seeding to compete with the grain. Less competition results when the companion crop is mowed and removed for hay or silage before it matures.

Beekeepers are frequently asked by farmers for recommendations in regard to forage crops which would be of benefit to bees. Practical suggestions along this line can lead to considerable improvement in bee forage. F.Q. Bunch, a Minnesota beekeeper used this principal to good advantage to improve the sweet clover stands in his county. He found it a very persuasive argument when he offered to defer part of the expense of the seed if the local farmers would seed reserve or unused land to this legume.

Forage seedings may also be very successfully started in the autumn with or without a companion crop. Moisture conservation is often a problem. A spring seeding may be made without a companion crop if pre-emergence herbicides are used to control weeds.

All legume seed must be inoculated prior to use. If the seed has not been inoculated prior to purchase an inoculant specific to the legume being seeded must be purchased and applied to the seed. This inoculation furnishes the seedling with a "starter" of nitrogen-fixing bacteria which enables the plant to "fix" atmospheric nitrogen and make it available to the growing plants.

### Red Clover





In general, soil preparation, liming and fertilization, seeding methods, weed control and first year care are similar for most legumes and legume-grass mixtures but some practices give better results and should be observed when dealing with a particular legume.

Alfalfa (*Medicago sativa*) is not as easily established in wheat as is red clover. Seedlings in oats or without a companion crop is better. The recommended seeding rate is 12 pounds per acre. Alfalfa is well adapted to summer seeding and may be clipped during the seeding year to control weeds. Alfalfa is a perennial and a good seeding will remain productive of high quality hay for several years if protected from its most common pest, the alfalfa weevil. Control of the alfalfa weevil by insecticides presents one of the hazards to beekeepers who keep bees in the vicinity of alfalfa fields. Unfortunately for the beekeeper, who hopes to harvest a crop of honey, forage crop specialists recommend earlier and more frequent cutting of alfalfa to increase the protein yield. This leads to cutting when only about 1/10th of the bloom is out. In northern areas harvesting alfalfa 3 times annually at early bloom is advised and is said to increase the protein yield by 45 to 60%. The best hope for beekeepers is that early cutting is sometimes delayed by heavy rains which keep harvesting machines out of the field, or for very dry conditions which delays growth, thereby allowing the bloom to appear before the next cutting.

Alsike clover (*Trifolium hybridum*) is not grown as extensively as formerly. It is a perennial particularly adapted to heavy clay soils in the cooler northern climates. It is usually seeded with a grain cover crop, often in a legume-grass mixture.

Bird's-foot trefoil (*Lotus corniculatus*) is a deep-rooted perennial legume adapted to poorly drained soils and cool climates. Although it is primarily a pasture legume, hay yields from upright growing varieties such as Viking are possible. The Empire variety is excellent for pastures because of its low growing habit and persistence under grazing.

A bird's-foot trefoil seeding is best made with timothy—6 pounds of bird's-foot trefoil and 4 pounds of timothy per acre. Bird's-foot trefoil should not be seeded with other legumes. Spring seedings are best and with a companion crop such as oats if necessary. It requires a specific trefoil inoculant. Band seeding is recommended and do not cultipack after seeding.

Medium red clover (*Trifolium pratense*) is the most widely grown of the true clovers. Medium red is a perennial that acts as a biennial under the usual farm conditions, which means that a stand dies out rapidly after the second year.

Red clover produces two cuttings per year, the second being the best for nectar



**Alsike Clover**

secretion and is often left to mature and harvested for seed. Seed set is increased considerably by a high rate of pollination. Bumblebees are the natural pollinators as honeybees are at a disadvantage because of their medium tongue length. Honeybees cannot reach the nectar except when the floret is shorter due to dry growing conditions or the nectar rises to above average levels in the late summer stands. Red clover seedlings are usually established by seeding into winter wheat in late winter or early spring. Timothy or one of the other grasses is often seeded with red clover for mixed hay.

Yellow sweet clover (*Melilotus officinalis*) and white sweet clover (*M. alba*) are the important strains of sweet clover. Sweet clover should be sown only in mid-winter or early spring. It may be seeded in fall-sown grains or with spring-sown small grains. If this method is used pasturing or cutting the small grain for hay will increase the chances of getting a good stand. Biennial sweet clover does not bloom the seeding year but crown buds are formed which grow rapidly in

**Alfalfa**



the second year. Seed is produced and the plant dies. Sweet clover is no longer grown for pasture or hay as it formerly was. Most sweet clover available for bee forage grows along roads or on vacant land as a volunteer crop. By taking a hint from the manner in which these stands become established the beekeeper can usually increase his forage in the vicinity of his bees by purchasing sweet clover seed and sowing it himself or having a cooperative farmer sow it on land which would otherwise be unproductive. The biennial yellow and white sweet clover seed is rather less expensive than most of the other clover seed.

White Dutch clover (*Trifolium repens*) which grows in city lawns is the same clover which appears in livestock pastures. If soil conditions are made favorable, which usually involves liming and keeping competing weeds and grasses mowed or closely grazed, white clover will often appear voluntarily and prosper. White clover is a perennial with a prostrate habit of growth. The stems root at the nodes and the stands spread rapidly and become very dense if conditions are at all satisfactory.

Other legumes provide rich sources of nectar under local conditions but are restricted in distribution because of certain peculiar requirements of climate or soil. Some, such as crown vetch yield nectar only under certain conditions which is usually a disappointment to beekeepers who have bees near large established seedings of this attractive ground cover along highways.

#### **Planting for Nectar and Pollen**

A number of changes in agriculture have contributed to the decrease in acreage and variety of cultivated and wild (weed) herbs, shrubs and trees. Unfortunately for the beekeeper the trend shows



no promise of reversal. Agronomists and field crop specialists are concentrating on cropping programs which depend on soil renewal utilizing high concentrations of inorganic fertilizers. Dense planting of high-yield varieties of corn, wheat and other grains along with improved soybeans requires careful attention to scientific agronomic practices most of which put a premium on fast and efficient fertilizers tailored to each crop. This is an expensive practice and requires heavy investments in terms of raw nutrients, labor and machinery. The practice of growing legumes for manure crops to renew soil fertility on highly productive agricultural land is considered questionable economics in current practice. Changes in land use has left the beekeeper with less forage even in the predominately livestock growing regions. Permanent pasture land has given way to harvestable stands of high protein forage such as alfalfa which is cut early in the bloom stage. Over much of the United States mixed stands of hay have stayed about the same in terms of overall acreage so the opportunity still exists for improving the lot of the honey producer. Acreage formerly devoted to buckwheat, white clover, alsike clover and sweet clover, for example has not been replaced by anything near as productive of nectar.

If the beekeeper is awaiting a happy solution to the dilemma of decreasing forage it may be a long time in coming. Without a concerted effort on the part of beekeepers they stand to lose more of the productive capacity in regions which are now only marginally profitable for commercial beekeeping. There exists a



White Dutch Clover

comparative abundance of marginal or non-productive land that can be utilized for planting to nectar plants but whether the return in the form of a honey crop alone is sufficient to warrant the investment in labor and capital is questionable. In some instances, and this may prove eventually to be a basis for a change in cropping practices, land which is now marginally productive will have to be brought into production due to the intense pressures of population increase, even though it will require labor-intensive

effort. A different type of agriculture, more like the cropping patterns of the past which provided soil restoration from green manure produced within the rotation, is the mainstay of farming new land that is being brought into production. This is particularly true in an agricultural economy lacking the advantages of a high input of energized machinery and raw materials imported from foreign sources for fertilizer.

Planting suitable shrubs or trees is a long term investment in better beekeeping. Trees such as the black locust (*Robinia pseudo-acacia*), basswood (*Tilia* spp.), tulip tree (*Liriodendron tulipifera*) and the Bee-bee tree (*Evodia daniellii*) can increase nectar availability after several years. In the interim, nectar can be provided from planting quick-maturing shrubs such as Vitex (*Vitex negundo incisa*), tartarian honeysuckle (*Lonicera tartarica*), cotoneaster (*Cotoneaster acutifolia*) or such perennials as anise hyssop (*Agastache anethiodora*), mountain mint (*Pycnanthemum pilosum*), purple loosestrife (*Lythrum salicaria*), hyssop (*Hyssopus officinalis*), Chapman honey plant (*Echinops spaerocephalus*), spider plant (*Cleome spinosa*) or one of the numerous members of the mint (*labiate*) family.

The selection of a specific tree, shrub or herb must be based on the nectar yield potential. It must be a flowering plant, one which is attractive to bees. It must be suitable for your locality and if possible it should have a value other than for nectar, if only as an attractive ornamental that fits into your planting scheme.

Next month, Bee Forage Plants.

# Getting Bees Up Your Skirt-or, The Woes of a Lady Beekeeper

by DOROTHY MCFALL  
Marshall, ARK.

SINCE MY seven hives of bees are fairly close to the house I enjoy many trips around the hives to watch and to analyze what is going on inside. I have never thought about them stinging any more than I would believe a dog would bite me if I didn't kick him first. I guess I forgot about the ones who are going to defend their homes.

This is my third year with the bees, doing most of the work myself since my husband became allergic to their sting. What a surprise I was in for one morning

when I attempted to take an entrance reducer out of one of my newly-formed and fast growing hives. I felt like they were ready for a little more space to get in with their loads of pollen and nectar. But—that cleat was really glued in tight. I began tugging and prying, not wanting to go to the trouble of making smoke to protect myself. Well, there was one tug too many and out the curious came. The first thing they saw was me in a dark skirt and up they went. I lit out for the house, tearing my skirt off as I ran. As I hit the back door the bees were hitting me. In

I ran, skirt hanging, an allergic husband yelling at me to get out with the bees, so I kept right on going out the front door. By that time my clothes were off, the bees had been mashed to death, and I had some stings that I will never forget.

Girls, the moral to this story is, if you are the beekeeper in your family, beware! Dogs will bite and bees will sting; barging into their homes without smoke can be a dangerous thing. Especially if you are wearing a black skirt....



# Honeybees and Microencapsulated Pesticide

By ROBERT G. NYGREN  
Springfield, Virginia

THE APPLICATION of microencapsulated pesticide, as with all other pesticides that are toxic to honeybees, requires that the pesticide be used in strict accordance with the product label and in a manner that does not expose honeybees to hazards. Since the microencapsulated pesticide Pennncap-M has been implicated in causing several bee kills during the last three (3) years<sup>1,2,3,4,5</sup>, and since the manufacturer of this pesticide is attempting to find wide agriculture acceptance on several crops,<sup>6</sup> it is essential that growers, beekeepers, and pesticide applicators become thoroughly familiar with the situations that could lead to large bee kills, so that necessary regulatory controls and precautions can be taken.

In research studies at the University of California-Riverside, Atkins and his colleagues found that encapsulated methyl parathion (Pennncap-M) was highly hazardous to honeybees.<sup>1</sup> In one bee kill incident reported to them where Pennncap-M was allegedly sprayed before bloom on alfalfa for weevil control, honeybees were killed continuously for two (2) weeks.

Burgett and Fisher, researchers in the Department of Entomology at Oregon State University, in cooperation with the Pennwalt Corp., showed that honeybees foraging on a blooming crop deliberately sprayed with Pennncap-M picked up contaminated pollen which was transferred to and ultimately stored in the beehive.<sup>4</sup> Pennncap-M residue was also found in the midguts of both nectar (honey) and pollen foraging bees. Therefore, both dermal (contact) and oral (ingestion) poisoning to the bees may result.

In studies conducted by the U.S. Department of Agriculture (USDA) Honeybee Pesticide/Disease Research Laboratory at Laramie, Wyoming, results have shown that honeybees cannot discriminate between pure, clean pollen and pollen contaminated with Pennncap-M.<sup>3</sup> It was further shown that the honeybees collecting pollen contaminated by Pennncap-M were not killed in the process of collection but were able to return to the beehive and store the contaminated pollen, resulting in a contaminated beehive with a continual bee kill in the hive.

Dr. Johansen, Professor of Entomology at Washington State University, reports the killing of bees following the use of Pennncap-M to be 5-9 times longer than that following the use of liquid methyl parathion.<sup>2</sup> P. F. Thurber, indicates that "we do not know for sure

how long the Pennncap-M is lethal to bees, but the latest tests show hives killed by Pennncap-M are still lethal to bees 17 months after the initial kill out".<sup>7</sup> Sonnet and his associates at the USDA Honeybee Pesticides/Disease Research Lab in Laramie, during 1978, found that beehive frames (comb) obtained from the same apiary that previously had honeybees killed as a result of pollen contaminated with Pennncap-M still caused bee kills 14 months after the initial spray application of Pennncap-M.<sup>8</sup> Only repeated testing over many months using previously contaminated honeycomb will reveal a realistic period of hazard.

Consequently, it appears that the use of Pennncap-M will have serious adverse practical and economic impacts on the beekeeper as well as possible environmental impacts. Such impacts will also likely affect the grower as a result of the beekeeper refusing to supply bees for pollination due to the fear of Pennncap-M and any forthcoming microencapsulated pesticides. Already, California beekeepers are refusing to supply honeybees to growers who are not willing to cooperate with beekeepers when applying pesticides and as a result kill bees.<sup>9</sup>

In Arizona during the period 1963-1977 honeybee colonies declined almost 50 per cent from 116,000 to 60,000, primarily due to the use of pesticides. Consequently, due to the loss of honeybees for pollination purposes during this same period, Arizona's muskmelon acreage declined from 18,100 acres to less than 11,000 acres and the alfalfa seed acreage almost disappeared, falling from 19,000 acres to 1,000 acres. It is estimated that the economic loss to the muskmelon and alfalfa grower as a result of pesticide kills to honeybees used for pollination annually amounts to \$10 million and \$6 million respectively,<sup>10</sup> not to speak of the annual loss to the beekeeper.

How does the Arizona situation compare with other states? Toxic insecticides are currently being applied to most agricultural crops (including alfalfa, corn, vegetables, oil-seed and fruit crops) from Maine to California and from Minnesota to Texas in ever increasing amounts.<sup>10</sup>

There is ample evidence that seed production and fruit sets are dependent on pollination. Legumes, most fruit, and many vegetable crops are dependent on bees for pollination. It has been estimated that 80 per cent or better of the pollination of fruit and seed crops in the United States is accomplished by honey-

bees. And at least 50 major agricultural crops are either dependent upon honeybees for their production or yield more abundantly when bees are plentiful.<sup>11</sup>

In the spring of 1976 approximately 2,500 colonies of honeybees were destroyed or damaged in the Lewiston, Idaho area and several hundred more were wiped out in central Washington. Both the Environmental Protection Agency (EPA) and Dr. Johansen conducted research in areas where the pesticide damage occurred and indicated the pesticide causing the bee losses was apparently Pennncap-M, the trade name for microencapsulated methyl parathion manufactured by the Pennwalt Corp., Fresno, California.<sup>12</sup> Dr. Johansen indicated that the insects most commonly involved in the pesticides application were the pea leaf weevil and alfalfa weevil as well as others. The EPA found that applicators, through misapplication, had the Idaho area nearly wallowing in Pennncap-M.<sup>7</sup>

Pesticide losses have so significantly and adversely affected the bee industry that beekeepers, in order to survive, have had to seek state regulation of pesticide usage. In an effort to 'prevent further occurrence of bee losses due to application of Pennncap-M', the EPA amended, in September 1976, the Pennncap-M label<sup>13</sup> which now clearly states that the product (Pennncap-M) is **highly toxic** to bees exposed to direct treatment or residues on crops or weeds. The label further states not to apply Pennncap-M, or allow it to drift, to weeds in bloom on which an economically significant number of bees are actively foraging. What is economically significant? In the case of microencapsulated pesticides, like Pennncap-M, where pollen is contaminated and returned to the hive, an economically significant number of bees could be just a few. Also, as Pennncap-M is not to be applied to weeds in bloom it should not be applied to any blooming plant.

However, amendment of the label will not prevent further occurrence of honeybee losses due to the misuse/application of Pennncap-M or any other pesticide, microencapsulated or not. Only appropriate state level regulations and enforcement thereof will prevent such misuse/application. Consequently, the states of Washington, Idaho, and Iowa have taken steps to control and/or regulate the use of the microencapsulated pesticide Pennncap-M.

Dr. Johansen indicates that Pennwalt Corporation also manufactures another microencapsulated insecticide, Pennncap-



E, which he suggests may potentially prove more hazardous as a pollen contaminant because the methyl material it contains is more volatile.<sup>12</sup> Accordingly, beekeepers should be working with their state regulatory agencies to seek regulation of the application of all microencapsulated pesticides, not just particular trade name microencapsulated pesticides such as PennCap-M.

In 1978, the State of Washington slightly modified its original PennCap-M regulations. However, the application restriction still exists and only applicators certified by the Washington State Department of Agriculture may apply PennCap-M. Except for three (3) orchard areas in the State where PennCap-M can be applied for a 30 day period, 30 days after full tree bloom, the use of PennCap-M is **prohibited** in any area of the State where bloom in crops or weeds attracts foraging bees. Applications are restricted within a six (6) mile radius of any registered bee location. Blossoming areas now include orchards, vineyards, and field crops including sweet corn, as well as fence rows, ditch banks, and the edges of orchards and waste land.<sup>14</sup>

If state-wide regulations are not established to regulate the application of microencapsulated pesticides and if PennCap-M is not used in strict and complete accordance with label requirements and established state regulations, serious and long lasting honeybee kills will most likely result with a severe economic impact to beekeepers, growers, and agriculture. Consequently, it is now that each state must establish regulations regarding the use and application of microencapsulated pesticides, including PennCap-M. Now is

the time to act before the honeybee industry can no longer survive and pollinators are unable to provide honeybees for the needs of the growers. Such days will come if state level regulatory measures are not taken immediately.

In conclusion, the time has arrived for each state's Department of Agriculture to initiate state-wide efforts to reduce the magnitude of pesticide application to agricultural crops as presently exists. It is time that sound Integrated Pest Management (IPM) strategies be initiated for the benefit of all agriculture throughout the United States.

Research is now available which documents that IPM programs can be highly effective in controlling agricultural crop pests while significantly reducing the hazard to bees.<sup>1,15,16,17</sup> Gyrisco reports that in several eastern states parasites are now successfully and economically controlling the alfalfa weevil.<sup>18</sup> He further states that controlling the weevil through spraying alfalfa is now a thing of the past in most parts of the eastern United States. Furthermore, it is expected that natural biological control methods will be satisfactory to protect the millions of acres of alfalfa grown for forage in the east. Other crops could similarly be protected.

Beekeepers accept the fact that farmers and growers have to control pests and that pesticides will continue to be used; however, positive steps need to be taken to save our major crop pollinator—the honeybee.

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## ALBERTA ASSOCIATION ELECTS OFFICERS

Above are photos of the recently elected Board of Directors of the Alberta Beekeepers' Association for 1979: Front Row, left to right Kenn Tuckey, President; Joan Tuckey, Ladies Auxillary representative; Jean Paradis, Representative at large; Marnie Abell, Secretary-Treasurer; Jack Cage, Northern representative. Back Row: Clem Dubeau, Canadian Honey Council representative; Eric "Mims", Southern representative; Eric Abell, Vice President; Carl Ulrich, Representative at large; Missing Rudy Heyn, Central representative.

Below are photos of officers of the Ladies Auxillary: Front Row, left to right, Pia Awram, Secretary-Treasurer; Joan Tuckey, President; Kim Philpott, Vice President; Back Row: Agnes Philpott, Historian; Paulette Breitenstein, Social Convenor; Dorothy Cage, Northern representative; Nilda Henwood, Southern representative; Missing Lorraine Dubeau, Central representative; Gwen Tegart, Past President.



## BEEKEEPER FINED IN NORTH DAKOTA

In a judgement handed down by the Justice Court of North Dakota at Bottineau, N.D., Harold Knoeffler, a beekeeper, was fined for a violation of territorial bee rights. The fine of \$2,000 will not be required to be paid pending the outcome of an appeal. A thirty day jail sentence was suspended on the condition the defendant complies with all of the laws of the State of North Dakota relating to beekeeping for the period of one year.

Knoeffler, through his attorney, had previously claimed that the statutes and regulations being enforced by the State were unconstitutional and invalid. In a decision made on October 10, 1978, County Justice Lester Kettering ruled that the defendant was guilty of various violations of the laws regarding placement of colonies of bees in North Dakota. Justice Kettering recalled that the Court had ruled that the laws had been held constitutional in an earlier case brought before the Court by the same defendant.



# Siftings

By CHARLES MRAZ  
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ANOTHER American Federation meeting in the beautiful city of San Diego has come and gone. As at all national meetings, it is wonderful to meet old friends again from the 50 States, Canada and Mexico. Four officials from the South Korean Beekeepers Association were also at the meeting and very interesting people to meet and learn of their beekeeping. The programs were excellent and well worth hearing and seeing.

Of special interest to me and perhaps to all serious beekeepers is that of honey adulteration. Thanks to Dr. Jonathan White there appear to be two good tests for adulteration of honey with isomerized corn syrup. It is most discouraging to hear that adulteration of honey is still going on and the Government in most cases cannot prosecute because of a lack of funds and personnel. It would seem that simply publishing the names of labeled honey found to be adulterated, by the Honey Council would be a most effective method of control. With a positive test for this adulteration, the guilty party would have no comeback, except to further air his dishonesty in court.

I understand Dr. White will establish a laboratory for testing honey in Texas. We beekeepers should support his work to the fullest with ample funds if honey is to maintain its integrity in the market place. Customers will not pay high prices for honey if it is suspected of being adulterated with cheap, artificial sugars, just because a few packers want to make a quick, dishonest buck.

Our program at the meeting on bee venom therapy apparently went very well, thanks to the wonderful talk by William H. Shipman of the U.S. Navy Research team. Over the past ten years or more William Shipman has done much research on the chemistry of bee venom and its therapeutic effect on arthritic-like diseases with horses, such as ring bone, side bone, hip joints, etc. Horses seem to respond to bee venom therapy as well as do humans. We can hardly say it is just "psychological effect".

Another excellent idea at the meeting is that tapes were made of all the talks. If you missed one or wanted to have a record of any of your favorite programs it could be bought for a most reasonable price. I hope this will be done at all the

meetings. With this modern recording equipment, a 90 minute tape can be reproduced in less than three minutes.

We stopped in to see our dear and good friend, Dr. Raymond L. Carey of Huntington Beach, Ca. who was a student of Dr. Bodog F. Beck some 45 years ago, along with Dr. O'Connell of Connecticut and myself. Dr. Carey has treated more cases of rheumatic diseases over a longer period of time than any doctor in the U.S. It was wonderful to go back to those early days and discuss the almost endless case histories of the unusual recoveries that make a fascinating story.

A new book has just come out, **Bees Don't Get Arthritis** by Fred Malone. Mr. Malone did an excellent job and everyone interested in bees and beekeeping must get a copy. It not only speaks of bee venom therapy, but of the therapeutic activity of other bee products such as honey, pollen, royal jelly and propolis. He picked up this information traveling over 30,000 miles over the U.S. and visiting beekeepers.

Another off-shoot of this work with pure bee venom is the treatment of people hypersensitive to insect stings, a problem all too common in beekeepers' families. I had the pleasure of meeting a lovely young lady that was practically a prisoner in her home because of this danger. The last time she was stung, she was unconscious for four hours and almost did not survive. The chances were the next sting would be her last from which she might not recover. She is now being desensitized and can take the equal of almost one sting with no effect. Eventually, when pure venom allergens become available to all allergists, this treatment will be available to everyone that needs it, to prevent anaphylactic shock.

After the meeting we found ourselves flying west again to Hawaii, my first visit. I remember well 50 years ago when I first started commercial beekeeping the Hawaiian Islands exported many tons of Algaroba honey, commonly known as mesquite honey. Sometime before the war, for some reason, beekeeping was abandoned and many of the bees died out with American foulbrood. There apparently were survivors resistant to the disease that multiplied and re-populated the island with bees. Beekeeping has not yet come back to its former extent, but there does seem to be a strong revival of the industry.

I hope to have the chance to look into many colonies of bees on the islands to see how the bees look as far as disease goes.

The only way resistance to AFB can be determined is by exposing them to the disease, those susceptible will get it, those resistant will not. These can be reproduced on a broad genetic base and maintained for a source of resistant breeding stock. This process of natural selection and survival of the fittest is a difficult and expensive method and not many want to pay the price. True, drug control is cheaper and easier. The big question is, what will be the long time effect? Will it always be effective? Will it cause other complications to develop as seems to be happening at the present time? The whole disease problem does not seem to be getting less, but more problems seem to be developing every year. One of these days, we will have to find out why.

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## USDA-EPA BEE PROTECTION TASK FORCE MEETS

An interdepartmental bee protection task force met on November 22, 1978 in Washington, D.C. to develop a program to protect honeybees. Those present were Dr. Phil Kearney and Bob Riley of the Office of Environmental Quality Activities, USDA; Phil Gray, Allen Vaughn and George Beshore of EPA/Office of Pesticide Programs; John R. Parks of ESCS (Economics); Clarence Domire, ASCS; and Dr. Bert Martin of SEA/AR (Bee Research).

It was noted that 8% of all colonies of bees are killed by pesticides every year and another 8% may be lost over winter because sub-lethal doses of pesticides shorten bees' lives and increase the impact of other stress factors.

The participants discussed methods of developing special guidelines for labeling and hazard evaluation of the toxic effects of pesticides on honeybees.

Phil Gray noted that EPA had prepared a plan for determining the extent and validity of the reported adverse effects of microencapsulated methyl parathion on bees. Five steps were outlined to attain this information. Mr. Gray said there had been no change in the PennCap-M classification situation despite the request of the manufacturer to reconsider the agency's restricted use classification. The labeling compliance provisions of the classification regulations for PennCap-M have been stayed until further studies are made.

GLEANINGS IN BEE CULTURE



# BEE TALK-----



By **DR. RICHARD TAYLOR**  
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SOMETIMES RIGHT in the middle of winter you get a warm day, and the snow melts back away from the side of the barn and the steps, disclosing the grass and the mud. That's when I get the feelings of springtime. I can practically see the crocuses poking up, and the bees eagerly visiting them for every particle of pollen they can get. It is only a portent of spring, not the real thing, and in a day or two the snow is heaped back up against the barn and the steps, deep as ever, and the cold has returned. But it stirs those good feelings inside. Patience! Just a few more weeks and the bees will be venturing out onto their sun warmed entrances and taking wing, the last few pockets of snow will contract to nothingness, and like the bees we will all spring back to life.

Last time I was talking about controlling swarming, and I said I'd go on with that this time. What I said had to do with requeening strong colonies, which is very tricky business, but it does tend to discourage swarming.

I also mentioned that giving the bees foundation to draw tends to take their minds off swarming, but I had better say just a bit more about that. Readers might have gotten the idea from what I said that you can discourage swarming by adding a super or two of foundation, but that is not so. What you have to do is insert one or two or three frames of foundation right down into the center of the brood nest if you're going to discourage swarming this way. The bees come upon this foundation right in the middle of their brood nest and, of course, they have to drop everything and get it drawn out, so that the queen can lay eggs there and keep the brood pattern concentrated in the usual way. So they tend to forget about swarming. If you just add a super of foundation it has no effect at all so far as inhibiting swarming is concerned. The bees just ignore it, until they need it for storing honey. But by that time they will have swarmed, in case that is what they were heading towards.

Every effective swarm control method I know of involves dividing the colony. If you want to increase your number of colonies, or if you want to make up colonies to sell to beginners, then you can practically eliminate swarming. The best and simplest way I know of is to make up nucs, as I described last time, and then, instead of using the nucs to requeen your colonies, just let them build up to new colonies which you can use to enlarge your apiaries, start new apiaries, or sell off to beginners. This is very effective in preventing swarming, and very profitable, too, in terms of the new and valuable colonies you get. And you will be surprised at how fast the parent colonies from which you make the splits will build up again.

Here is the way I do it. I go to the strongest colonies, that look like they might swarm if left to do things their own way, and from each of these I take out three, maybe even four, combs of mostly sealed brood, along with the bees that are on these combs. There must also be some honey and a bit of pollen in those combs, but as little unsealed brood as possible. It doesn't matter if there is some unsealed brood, but you aim at getting sealed brood that will not need any more feeding and tending. Make sure you don't get the queen with these combs. Put them in another hive body, filling this new hive body up with six more frames of drawn comb or foundation, and replacing the combs you have removed from the parent hive with frames of foundation, right in the center of the hive, preferably in the top story if it is a two-story hive. Now requeen this nuc (nucleus colony) you have made up, in the way I described last time, and set it on top of any convenient colony in the apiary. After a week or so, when the new queen has been accepted and has started laying eggs, you can move that nuc to a new hive stand, or a new apiary, or you can set it out in your front yard with a sign, "Bees for Sale". Have the bee inspector stop by to check it before you sell it, unless he already checked the parent colony before the nuc was made up.

This way of making up new colonies does not weaken the original colonies, except very briefly. The bees go right to work drawing out that foundation with which you replaced their combs of brood, and the queen fills these new combs with eggs as fast as she can, and in no time the colony is stronger than ever. It is also not likely to swarm, provided you got to it before the swarming impulse had taken over.

Sometimes you find that the bees already have queen cells well underway, with royal jelly in them and large growing

queen larvae. In that case it is usually better, and cheaper, to divide it as follows: Replace the second story with a hive body of drawn combs or foundation, then set that second story, which will contain most of the queen cells, over that, with a double screen underneath. The original second story, in other words, becomes a third story, separated from the two stories below it by a double screen or, lacking this, by a regular inner cover with the hole screened over on both sides. Poke a small stick or pebble under one edge of this third story, so the bees can get in and out, and let them hatch out their own queen. In two or three weeks, when that new queen is mated and laying, set that top story off onto a bottom board, give it a cover, and you've got yourself a new colony. That nips the swarming impulse pretty well, because the bees below suddenly find that they have lost half or more of their brood, most if not all of the queen cells they were tending, and that in the place of all this they have a new story of empty combs or foundation to go to work on. The third story, being separated from them by a double screen, is no longer regarded by them as part of their colony at all. Still, it is kept nice and warm, by the warmth of the stories below.

I think that is the best way to cope with swarming, by trying to keep one step ahead of the bees. What the bees want to do is start a new colony, and you just humor them along in this, but keep things more or less in your own control, instead of leaving everything up to them. I have always found that this is the right approach in beekeeping, to work along with the bees, instead of trying to do battle with their basic impulses. That way you save yourself, and the bees too, a lot of futile work and frustration.

(Readers with questions, please enclose stamped envelope.)



When "splits" (new colonies) made up from existing colonies are set on top of other colonies they can be moved to new locations in daytime without loss of field bees, which join hives below. (From *The How-To-Do-It Book of Beekeeping*, Linden Books, 1977).



# From the West



By CHARLES J. KOOVER  
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## THE VOICES OF EXPERIENCE

THE HUNDREDS of letters I received regarding the December article in *Gleanings* have brought in enough results of tests conducted by readers to keep me going for all of 1979. For instance, on the use of molded plastic floorboards a reader in No. Carolina states, "I am very interested in these plastics because as you stated the bottom boards will not rot. This has got to save money in the long run at least. I am employing about 20 plastic bottom boards at the present time and they seem to be working out just fine. I have noticed that it takes my bees longer to propolize plastic bottoms to the wood super than to propolize the wood bottom to the wood super. Why this is so I do not know, but they get propolized just the same eventually and it causes me no hardship. I have 68 hives at present and try to maintain a numerical status of 60 to 75 hives. I think the use of plastics will be a shot in the arm to beekeeping especially to beginners".

About swarms he writes this. "Those colonies lost during the winter are made up either thru our own hives swarming and/or swarms given to us by friends and neighbors. It surprises me how quickly word gets around about who keeps bees. People often see swarms of bees as frightening, terrifying, unwanted intruders. It doesn't take long for them to ask someone who knows or has heard that a certain individual in the community keeps bees as a hobby. I have been having more calls than I can handle around May 1st to June".

And right here I want to urge all beginners to wait until the swarming starts to establish their first hive. Not only is a swarm for free but they work like the devil is on their tails. Nectar is coming in all over the place. Normally you don't have to feed them unless there is a rainy cold spell. They will draw the most beautiful all worker cells and the queen

will start laying at top speed, following the cell builders around as soon as they get cells drawn out ready for eggs. The bees are too busy to go after you unless you make too much of a nuisance of yourself. It's beekeeping at its best.

Another large operator keeps his bees on hive stands. In California, when I lived there the large operators, like the circus when it goes into winter quarters, put their hives on long rows of benches at least two feet off the ground while wintering. When out in the fields pollinating crops they would have to put them on the ground for it would be too costly to haul portable hive stands around. This is what he has to say about hive stands. "I am using hive stands as you directed them to be made, mainly to keep the skunks and possums out of the beehives. This summer one hive was overcrowded and the skunks would wipe the bees from the cluster in front of the hive and then scratch them up from the ground. Before I used the stands there would be paths to my beehives from so many visits by skunks and/or possums. The only problem I've had using the stands, and it really never has produced an accident yet, I sometimes overbalance the hive when manipulating supers. It scared me a few times but I never dumped one off. Of course I think the stands have other benefits than just keeping the wild animals from the bees".

I used to advocate a stand for each individual hive because if you use a double hive stand the bees in the hive you are not working on get so irritated by the shocks and vibrations you create in opening and closing the hive next to it. Especially if you have to lift off supers. When you are through with the first hive the bees in the next hive are ready for you and let you have it. Single stands are ideal for beginners and back-lotters but I have to admit large operators can't afford such luxury. Keeping bees to make a living is a horse of another color.

So many of you want to know about staples to space frames. The latest idea is to go to your stationary store or whoever sells office supplies and get a box of the larger size paper clips. They are cheap, they have been tempered so they won't buckle when you drive them into your frames. Nor will they split the wood. All you do is to cut them in half and you get two staples. A big one for the topbar and a bit smaller one for the endbar. Another brainstorm when I couldn't go to sleep one night. Saves you money. You have to when you keep bees.

And then the owner of a famous berry farm in Ohio the Editor of *Gleanings* wrote about has this to say about Manley frames. "You wrote about Manley frames. I have many of them and like

them very much. I like the frames with top and bottom bars the same width. Your idea of springing the foundation sheets into place in grooved frames works real well".

My allotted space has been used up and I have not described the Manley frames this month as promised but will do it for sure next month.

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## "THE SWARM" JUDGED ONE OF TEN WORST

THE movie *The Swarm* has been chosen one of the worst 10 movies of 1978. CNS Reporter Carol Olten says of the movie, "The problem with the movie was that it was intended as a disaster picture about killer bees which when swarming en masse, looked no more menacing than clouds of slightly neurotic gnats.

The picture is the worst schlock piece of the year—a bee movie that is a B-movie without any bzzzzt."

(Editor's Note) It's a continuing losers role for the honeybee in 1978. They were hit with micro-encapsulated pesticides, had their honey adulterated, threatened to be banned from suburbia and now they are accused of being worst actors of the year!

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FLETCHER THE 4-H'ER  
JOE E. BURENCH



"IF FLETCH GAVE JUST HALF THE ENERGY AT CHORES AS HE DOES AT SPORTS, WE COULD DROP TWO HIRED HANDS!"





# Research Review



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

## Emetics Fail to Reduce Bear Damage

IT HAS BEEN suggested that feeding bears brood and honey mixed with lithium chloride or cupric sulfate, both of which are emetics and will cause the bears to vomit, might discourage them from feeding in apiaries. The feeding of compounds like this is called aversion conditioning. The method has had some success in controlling damage caused by animals under other conditions.

Bear damage to apiaries was estimated at \$200,000 in 1976 in Alberta, Canada, where these tests were conducted. This damage occurred despite the increased use of electric fences around apiaries and a bear-removal program conducted by the province.

To test the two emetic compounds the researchers baited both honeycomb and brood comb. The baited combs were placed in supers outside of electrically fenced bee yards. Thirty-five bee yards were baited with lithium chloride in 1975; thirty control yards were observed. In 1976, 23 bee yards were baited with lithium chloride and 22 with cupric sulfate; 32 unbaited yards were observed as controls in that year. Thus, the total number of bee yards under observation was sufficient to give good data.

It was found that most bears were not stopped by an electric fence, penetrated the unbaited, fenced yards on their first visit. Baiting the apiary diverted the bears on their visits, perhaps because the baits satisfied their immediate food requirements. However, the presence of bait may have encouraged subsequent visits. It was noted that when apiaries were rebaited the bears usually took less bait on the second visit. There was one notable exception, a bear that made eight visits, consuming a large quantity of bait dosed with lithium chloride on each visit. In general, the data indicate that bears learned to avoid the bait but not the beehives.

The data show clearly that neither lithium chloride nor cupric sulfate in honeycomb and brood comb baits reduces black bear damage in bee yards.

Dorrance, M.J. and L.D. Roy.  
Aversive conditioning tests of black bears in bee yards failed.  
Eighth Vertebrate Pest Conference. Vertebrate Pest Council  
of the Vertebrate Pest Conference, University of California.  
Pages 251-254. 1978.

## Queen Attractiveness

There has been a nearly 30 year search for the substances which make queens attractive to workers. We are now reasonably certain that the substance which is the sex attractant, and which is used by swarming bees to make certain their queen is present, is not used to recognize a queen when she is in the hive.

A new paper from Russia (cited below) gives good evidence that a queen walking on wax (comb) leaves a substance which is attractive to worker bees for about 30 minutes. The author uses the term "queen tracks". This information was obtained by measuring the number of bees attracted to a queen cage at one minute intervals after the queen was removed.

Juska, Alfonsas.  
Temporal decline in attractiveness of honeybee queen tracks,  
Nature 276:261. 1978.

## Venoms

A new book reviews what is known about arthropod venoms. It includes chapters on bees (mostly honeybee since little is known about venom from other bees), wasps (there is a separate chapter on social wasps) and two chapters on ants. The documentation is thorough; each chapter contains a lengthy list of references. Forty-three persons are listed as authors.

The authors of the chapter on bee venom are cautious. However, they state that there is "such a wide-spread belief in the value of bee venom therapy that continued investigation seems fully justified".

Bettini, Sergio, Editor  
Arthropod venoms. Springer-Verlag, New York. 1978. 977  
pages.

## HONEYBEES HELPED

BEGINNING last summer, alsike clover was added to the brome/alfalfa seeding mixture for Illinois roadsides based on the recommendation of the State Apiary Supervisor, Eugene Killion and the Illinois State Beekeepers' Association. Presence of the clover provides additional forage for bees and presence of pollinating insects may help the alfalfa and clover to re-seed itself. Earlier seeding tests showed that alsike could be established easily and at low cost.

These roadside hayfields will provide excellent and badly needed wildlife cover for many years to come. When the seedlings mature, the competitive nature of the brome/alfalfa will retard weed infiltration. Early mowing will inhibit the competitive character of brome/alfalfa, which may result in weed invasion. Mature seedlings, if left unmowed through August 1 annually, will present a uniform appearance, will be relatively free of weeds, and will last 15 years or more.

Taken from Illinois Dept. of Conservation Roadsides for Wildlife Letter.

## KILLER BEE HONEY MARKETED

THE latest scheme is "Killer Bee Honey" according to several reports reaching *Gleanings*. One article reports the imported Brazilian honey is selling for \$3.98 for a five and one-half ounce jar.

Ronald De Christoforo is a promoter of the imported honey along with two friends, Ed Zuckerman and Kip Curren. The three journalist-writers, who had met while graduate students at Columbia University learned of the honey while they were on assignment to cover the "Killer Bee" story in Brazil.

None of the three had been involved in the business before but agreed this was something that would be fun and could make money.

The honey is accompanied by a pamphlet detailing a history of the African/Brazilian bees.

## QUEBEC FIGHTS DISEASE

A Province of Quebec report by Francois Beauchesne, Provincial Apiarist of Quebec, Canada is mentioned in the *Manitoba Beekeeper* (Winter, 1979). It tells of how the government is approaching the disease problem. They plan to fumigate all bee equipment in Quebec and disinfect all honey houses. They fumigated 6,000 hives last year and are now building a second large fumigation chamber. Their present chamber, a semi-trailer, holds 600 supers. If there is a recurrence of disease they destroy the infected equipment by burning.



# Fundamentals for All



By **W. A. STEPHEN**  
Worthington, Ohio

AFTER WRITING the article about ventilation in the beehive, which appeared in the October 1978 issue of *Gleanings*, I was forced to think further about the conditions within the hive, particularly as they affect wintering.

For three years now, I have done something that so far has worked well. It has resulted in no winter loss of colonies. It has probably meant that I have had less surplus honey to sell, but it has meant excellent over-wintered colonies and, for me, freedom from the bothersome task of subsistence feeding. As all beekeepers know, bees wintered in double brood chambers often go into winter with very little honey in the bottom set of combs. They store honey above the brood area so it goes into the supers and the upper brood chamber. Some colonies will put most of their honey in the supers and little in the brood chambers. These are the ones which require extra attention and, if they don't get it, will be dead the next spring.

As the cost of labor goes up, special colony manipulation becomes more expensive. The price of honey is now much below production cost, so it pays to trade off honey against labor. Colonies that require special manipulations eat into profits (or increase losses). Your knowledge of bee-needs, your decision making based on that knowledge and evaluation of particular colony requirements, and your ability to manipulate a certain colony so that it can continue to thrive productively, make your time worth twenty cents a minute at least. The fact that you are a hobbyist does not alter that fact. You would pay that, or more, to anyone with knowledge and ability to make the required intelligent colony manipulations for you and your time is more valuable than that of anyone you could hire.

What then about the colony which has little honey in the brood chambers? Give it honey in brood combs! I use shallow honey supers, but I always have a couple, or three, deeps on particularly good colonies from which I can get extra combs of honey when needed. Full combs exchanged for empty side combs help correct the situation in colonies with insufficient stores.

As for the majority of the colonies, reversal of the brood chambers soon after

the main nectar flow results in empty combs in the top box. The timing varies greatly throughout the country. Here in Ohio, it is in July; any surplus honey made later will (hopefully) be stored in the upper brood chamber. If not, full combs must be substituted for empty ones. These manipulations, plus the ones that result in the desired hive weight, enable the colonies to have about 60 pounds of honey going into winter, especially if there is a fall nectar flow.

My bees did not make much honey from goldenrod and aster last year. I took off the surplus honey earlier than usual, leaving one partially-filled super on each colony. After extracting the honey, I returned the supers for cleaning out and for surplus honey if there was a late flow. There was some and the bees stored some in the second super. What was my surprise when I went to take these for storage to find that there was more honey in the second super than in the first one directly over the brood chambers! This puzzled me for some time, until I reasoned that the bees had been taking this honey down to store around the brood nest. They were taking what was nearest first, hence the lighter first super. I consolidated the combs with honey in them in one super and left it over an inner cover, with the escape hole open. When I returned for these supers in a couple of weeks, most of the honey had been taken down. What little remains will be there this spring when I super my colonies. So much for winter provisions.

My discussions and considerations of hive ventilation have resulted in these conclusions: ventilation in summer should be through the lower entrance and ventilation in winter should be facilitated. In the first case, the bees do the ventilating; in the second, natural systems beyond the control of the bees should be allowed to work.

I hope that what I have done to help natural convection currents carry off hive

moisture will work out. I now have auger holes below the hand holds in all my brood chambers. All inner covers are jacked up at front by placing a strip of shingle underneath at each side. The top entrance at the front is protected from wind by the telescoping cover, but there is provision for ample escape of the moisture-laden air. The lower entrances are limited to the small cleat cut-out, or are shut completely. The entrance of outside air will be through the auger-hole entrances. In a final effort to facilitate the elimination of moist air from the hives, I have painted the fronts of the brood chambers black. The black fronts will absorb the heat of the sun, warming the air inside, which will be forced up and out under the inner cover. This spring, when I remove the entrance reducers, I'll stopper up the auger holes and turn the black fronts to the back. The bees will then have to use the lower entrances. Since they regulate ventilation to just the amount needed, I shall remove the shingles supporting the inner covers.

After seeing what happened to my colonies here in central Ohio during the 1976-77 and 1977-78 winters—one the coldest on record; the 1977-78 winter the snowiest—I am not concerned about the bees' ability to survive. They have plenty of honey. I have left the organization of stores up to them, rationalizing that my management has resulted in the optimum positioning of their brood nest. From past experience, I know that some colonies will need some additional feed in late winter. If they are strong, as I anticipate, they will be able to use dry sugar poured into empty combs and onto the inner cover. I know that all will benefit from a pollen substitute feeding, so I'll need to be ready for that. Otherwise, the outcome remains to be seen.

Ohio beekeepers sustain a loss of about twenty per cent of their colonies each winter. Add this to the amount of honey used by those colonies prior to death and the combs ruined by the wax moths before the beekeepers get around to check, and you come up with an astounding figure. No business manager worthy of the name would survive under such circumstances! If you presume to manage your colonies, it's up to you to do what you can to cut losses to a minimum. I am trying out some ideas, and this spring I shall let you know how I make out.



# Notes from the Straw Skep



By BESS CLARKE  
Canton, PA.

RECENTLY MY brother attended the funeral of a second cousin with whom we'd pretty much lost contact. He called to tell me of the excitement of finding two more cousins who are alive and well and involved in interesting occupations. I've just written to one of them to inquire about some possibilities of mutual friends and to send a list of names of our forebearers which he requested. He must be interested in genealogy too. (I have to qualify that statement. I'm not gung-ho on ancestors, only mildly curious.)

I had an interesting experience last summer. Met a cousin (on the other side of the family) who really is searching. We share a great-grandfather who was born in Germany. We exchanged information and I got much more than I gave, believe me. However the most interesting part to me was the fact that his wife and my husband are both descended from Clarkes in Wolverhampton, England. So we're probably related on both sides of our family. Another cousin has written to ask for names, addresses, and birthdates of my fathers' children and grandchildren. She's preparing a birthday calendar for her daughter which will have names and vital statistics of my generation.

And so it goes. I can remember when my father was searching for information and I couldn't have cared less. Now I wish that we had saved his papers. Somewhere along the line they were thrown out and a lot of research has to be done over. Guess that's part of the game.

One more story--Several years ago there was a letter to the editor in *Gleanings* with a name that sounded familiar. I wrote to

ask, and sure enough, it was the husband of one of my distant cousins and he was keeping bees. That contact brought an exchange of letters and eventually a very pleasant visit. It's a small world, yes?

My recipe for this month is Peach Cobbler, a good heavy high calorie cold weather dessert. Other fruits could be used instead of canned peaches. I'm sure it would be good with cherries, too.

Peach Cobbler: 2-1/2 cups drained, canned peaches, 1 cup water, 1/2 cup honey, 1/4 tsp. nutmeg, 2 tablespoons cornstarch. Spread fruit in bottom of greased 7 x 11 inch pan. Mix water, honey, cornstarch, and nutmeg and pour over the fruit. Topping: 1-1/4 cups all-purpose flour, 2-1/2 teaspoons baking powder, 1/4 teaspoon salt, 1 egg, 1-1/3 cups milk, 1/4 cup honey, 1/4 cup margarine melted, 1 teaspoon vanilla. Beat egg, milk, honey, margarine, and vanilla together. Add dry ingredients which have been mixed together. Beat until smooth. Pour over fruit mixture. Bake at 350°F. for 45 minutes. Serve warm with milk or cold with ice cream.

## NEW BULLETINS AND INSTRUCTION MEDIA

### BEE POISONING EDUCATION

A bee poisoning education slide set (80 slides) prepared by Dr. Carl Johansen, Washington State University, Pullman, WA. has been distributed by the Cooperative Extension Service for use in the Pesticide Training Program.

Individuals can now obtain the slides and captions by sending a check for \$25.00 payable to Washington State University to the Conference Office, Cooperative Extension Service, Washington State University, Pullman, WA. 99164.

### INTEGRATED PEST MANAGEMENT: ALFALFA SEED CROPS

A 19 minute color film on Integrated Pest Management, IPM coordinates predator insects, weather factors, chemical controls and farming practices to help produce better crops.

Film prints in plastic mailing boxes are \$110.00 each. U-Matic format video cassettes are available at \$60.00 each.

Send purchase order to Cooperative Extension Service, College of Agriculture, Washington State University, Pullman, WA. 99164.

For preview print or tape contact Extension Information Office: (509) 335-2511.

### BEEES AND BEEKEEPING

A thirty-five minute slide-tape presentation of the story of beekeeping for non-beekeepers. Available for presentation to school classes, garden clubs, civic associations and other public audiences.

Includes a set of 80 color slides, a typewritten script and a cassette tape script. Sets available for loan. Advise date of showing well in advance. Mailable. Write to *Gleanings in Bee Culture*, Medina, Ohio 44256.

### NEW BEEKEEPING DICTIONARY

A new beekeeping dictionary published by International Bee Research Association, Hill House, Gerrards Cross, Bucks, England, SL9 0NR. The editor is Eva Crane. The full title is Vol. 5 of the *IBRA Dictionary of Beekeeping Terms*. Avail-

able in English, French, German, Russian and Spanish. \$11.50 plus \$.75 postage. Available from Publisher.

### NEW BOOK

*Apiculture* by G.A. Avetisyan has recently been published by the Apimondia Publishing House in English. It is the translation from Russian of the course of lectures given at the K.A. Timiriazen Academy of Agricultural Sciences in Moscow.

No price is given. Write to Apimondia Publishing House, STR., Pitar, Mos 20, R70152-Bucharesti, Romania.

### TO BE OR NOT TO BEE

A new beekeeping film from England. Mr. L. Thorne, Manager Director of E.H. Thorne (Beehives), Ltd., has produced this film. It tells the experiences of a beginning and a "very sad ending" in a beekeeper's season.

The film is available for outright purchase at \$150.00 (check your bank for dollar equivalent).



# Bee Organized

Ever arrived at an outyard and find you have forgotten matches, smoker, veil, hive tool or smoker fuel?

By **SIDNEY GROSS**  
St. Charles, IL.

## Part I

GOOD BEEKEEPERS are made, not born. So often the difference between the successful and the marginal beekeeper is not an innate skill or dexterity, but simple organization. Organization means knowing precisely what you want to do with your bees, how you want to go about it, and when you want to do it. It also means having the right tools and materials at hand when you need them so that you can go about your work efficiently. Lacking a crucial piece of equipment even the best beekeeper on earth will be forced to improvise; while it may be that necessity is the mother of invention, most of the time we're better off relying on the tried and true.

Why is organization so important? If at a bee yard we find a condition that needs correction, say a loose or missing bottom bar on a frame, and we fail to set it aright immediately, most likely we won't get back to it later on. Then, either when we remove the box with the broken frame or when we try to extract the honey from it, our earlier failure to correct the situation will haunt us with a vengeance. Usually when a certain repair or manipulation becomes absolutely necessary rather than merely elective we will have to spend more time on it than we would have if we had gotten to it when the difficulty was first noticed. Take the missing bottom bar. It can be replaced in a few seconds using a spare part, a tack hammer, and some nails. If we let the job slide, as we might be tempted to do, chances are that the frame will break in a radial extractor and cause a mess. The clean up involved will take more than just a few seconds and it is something which will have to be done before extraction can proceed. Bee management from the apiary to the honey house to the salesroom is a logical sequence; every step has an appropriate time and place, and to do it out of phase is to waste valuable time and effort.

Organization is a necessity for all beekeepers, the more so if bees are kept in outapiaries as opposed to a home yard. Who doesn't know the frustration of having driven twenty miles to a bee yard only to find that some essential tool or piece of equipment has been left behind?

How many of us would tolerate, say, a plumber who had to leave in the middle of a job because he left his pipe wrench behind at the shop? Time is money for the repairman and for his customer alike. This adage applies to the beekeeper as well. There are enough imponderables in our craft without those created by our own carelessness and lack of preparation. A good beekeeper should never be forced to make an extra trip to an outapiary simply because he came unprepared to handle a routine situation on the initial visit.

I would like to discuss certain elements of organization as they apply to the non-commercial beekeeper who has one or more outapiaries. Most important is the **motor vehicle** that is used to get to the yards. Certain supplies and materials should always be ready at hand in the vehicle. Secondly, the **outyards themselves** can be organized in a manner which will make work easier. Finally, the **home base** from which the beekeeper operates can be set up quite easily to encourage maximal efficiency in the entire enterprise. I have personally tested each of the suggestions that follow; although I admit that I do not religiously adhere to every one of them, they all work and they all make for better beekeeping.

## The Motor Vehicle

I imagine that most beekeepers with outapiaries use the same vehicle consistently to travel to their bees. If this is the case the vehicle can be fitted with all the essentials needed for routine management and the beekeeper can simply take off and go on a moment's notice. Since ample cubic footage is needed to haul supers I assume that most bee vehicles are either pickups or vans, or else station wagons or trailers hitched to cars.

**Tool Box**—A large box of some kind provides organized storage space. Once you fill such a box with the essentials I outline below you can drive to a bee yard confidently knowing that you are equipped to handle any routine matter. My own tool box is heavy gauge steel. It is mounted permanently across the bed of my pickup truck leaving several inches clearance from the bed. A simple chest cobbled from scrap exterior plywood will serve as well and it could be permanently set against the wall of a van or a trailer. The tool box—a space set aside just for beekeeping equipment is an absolute

precondition for organization in your beekeeping operation. Once you have the tool box mounted make a vow (1) that when you remove something from the box you will always return it after use, and (2) that every article will have its own specific place or area in the box so that you don't have to go on a treasure hunt whenever you want something.

**Water Jug**—Keep a gallon plastic water jug in the cab of your truck and make it a point to fill it before you leave home. Most bee yards are not near a source of sanitary drinking water. Since a good deal of our work as beekeepers is done in hot weather it makes plain good sense to have an ample supply of water on hand at all times.

## Contents of the Tool Box

**Smoker**—Along with the hive tool, the smoker is one of the absolute essentials of bee management. I at least have never heard of a beekeeper who routinely did not smoke his bees before examining the hive. My point in mentioning a device as fundamental as the smoker is to underscore the fact that it's all too easy to forget to take it along to an outapiary unless there is a specific place for it in the tool box. After you've used your smoker and it has cooled, put it right back in the box so that it will be available the next time you require it. As extra insurance you might want to carry a can of aerosol propelled "artificial smoke" (available in any supply catalog). This is nowhere near as effective as the genuine article but it will do in a pinch and also when only superficial manipulations on just a few hives are called for.

**Fuel**—We all have our own pet smoker fuel, my own being a mixture of pine cones, corn cobs, and grass. This fuel is free for the taking, and the pine cones have the added advantages of being dry and of having pre-engineered air spaces. Being organized with respect to fuel means not only having it available but also taking the time to gather it in quantity during the proper season. Corn cobs, for instance, must be collected in the fall. Spring is too late since the farmers will disc under any field residue. Furthermore, storage of the cobs over the winter months will allow them to dry out. If you delay in your fuel collection activities you may find yourself dependent upon some relatively expensive or inadequate fuel source the following bee season. So, decide on a cheap, easily accessible smoker fuel that works well for you, find a source near one of your yards, and lay in a good supply at the right time.

**Fuel Pail**—Sixty pound tin honey cans, if handled correctly, can be refilled many times. Once they do become rusty or dented they can be recycled for purposes other than honey storage. Remove the



top of one such can with a can opener and cut it down to a height which will slide beneath the truck tool box. Fill the can with smoker fuel. Depending on the number of hives you have, such a can may have enough capacity to hold enough fuel for most of the season. You should never find yourself stymied in an out yard for lack of smoker fuel. Because the can fits under the tool box, your fuel will be protected from the rain. Old sixties have other good uses as well. You can carry one along to hold waste that would otherwise be strewn on the ground. Another sixty could be used as a receptacle for burr comb scrapings.

**Fuel Smothering Device**—A fuel smothering device is a smart idea for many reasons. If, after you are through with the bees, you let any remaining fuel burn out in the smoker you will burn through the firebox prematurely. You should not, of course, dump smoldering ash on the ground because of the danger of fire. Furthermore, to simply allow smoker fuel to burn itself out when it is not being used on the bees is to squander what is for many of us a scarce item. There is a simple solution for all this: Procure a wide mouthed metal can which has a fitted top (a clean gallon paint can is ideal for the purpose) and dump into it any hot excess smoker fuel at the end of your rounds. Close the cover and the fire will suffocate in minutes. Once the pail and smoker are cool put them back into the tool box. The next time you go out to a bee yard transfer the contents of the friction pail back to the smoker; since the material is nice and dry it will make a good starter for your next fire.

**Disposable Lighter**—Like the hand held calculator, the butane lighter is a case of an expensive novelty which is now dirt cheap. Often I find these lighters on sale at three for a dollar—a virtual giveaway. Each lighter can be used several hundred times without fail. Put one of these gadgets in the tool box and use it to light the smoker. A lighter beats wooden matches by a mile since you have no worries either about an adequate striking surface or about dampness. At the end of the season throw the lighter away and replace it with a fresh one. Regular replacement, even when the old lighter is still functional, assures you of a fire every time you need it. The same principle is used in industrial maintenance where light bulbs are replaced on a regular schedule without waiting for burnouts to occur.

**Hive Tool**—The hive tool is a must for every beekeeper. Always have at least two of them in the tool box. This way if you mislay one of them at a bee location you can grab the spare. It's also a good idea at the end of the season to repaint the tool handles in bright red or yellow. In this way they'll be visible should you set them down in the course of your work.

**Veil**—I keep a second or spare veil with me always, just as I do in the case of the hive tool. If a veil should become torn in the course of a day's work I can easily switch over to the remaining good one. Why be forced to retreat from a bee yard in the midst of an ideal day just because of a tattered veil? Needless to say, once you begin using your spare veil or hive tool pick up a replacement from your supplier at once.

**Gloves**—As far as I'm concerned, gloves are an inconvenience in most bee management situations. Nonetheless, I always have a pair in the truck. Certain circumstances, like uprighing a fallen hive, call for the use of gloves—for me at any rate. When you encounter an unforeseeable situation which demands the use of gloves it's good to know that you have them around.

**Jump Suit**—A jump suit (either farmer's work clothes or a professional bee suit), like gloves, is an item which I don't ordinarily use. Still I always carry this extra protection against the unforeseen. A jump suit should be big enough to fit over your regular clothing. You will find it useful when you have to move beehives or when you are forced to work your bees at times when they are mean.

**Rubber Boots**—Rubber boots make very good sense when you have to tramp through snow and mud in the early spring. Their use will prevent domestic flareups as well, since you will not be tracking up your wife's clean floors back home! If you have an old expendable pair, leave them in the tool box permanently, since this is the type of item you will normally forget to take on a yard visit.

**Tire Chains**—If you ever get stuck in a muddy outapiary, miles from civilization, tire chains will mean the difference between a few minutes' inconvenience and an entire day of frustration. I've had to use my tire chains only once in the past nine years. That single memorable experience has convinced me that they are worth every cent I paid for them.

**Miscellaneous Tools**—Tools are specialized extensions of the human arm meant to help us correct or modify situations encountered in the course of our work. The essence of being organized is fixing something as soon as you discover that it is out of kilter. To do this in the bee yard you will need some simple, inexpensive tools. A basic kit should include a sixteen ounce claw hammer, slotted and phillips head screwdrivers, a tack hammer, a coping saw, a jack knife, lineman's pliers, pruning shears, and a small pruning saw. My general philosophy of tools is that if I need a tool once I will need it again, so I go out and buy it.

**Miscellaneous Repair Parts**—Most of your on the spot repairs at a bee yard will be of the type which involve fastening together of broken parts. Keep in your tool box an assortment of nails, a box of hive staples, some frame top bar menders, and picture wire. Do not yield to temptation by throwing together different sizes of nails indiscriminately; keep everything you need separated by size and you will save time and aggravation in the long run. The plastic comb honey containers with tight lids make excellent organizers for small parts as well as nails and screws.

Listed above is everything that you should be carrying with you in your truck tool box at all times. It may sound like a lot but when actually assembled it fits into a rather compact area. You may want to eliminate some of the items or on the other hand augment some of my suggestions. The important thing about organization is to have on hand what you need when you need it. Now let's take a look at the bee yard itself. Aside from your beehives, certain pieces of equipment and parts should be stored at each of your locations, ready for use should the need arise.

Next Month, Organization at the Bee Yard.

## NEBRASKA HONEY QUEEN

Miss Kay Pearson, daughter of Mr. and Mrs. Kermit Pearson, Cozad, Nebr., was crowned 1979 Nebraska Honey Queen. She is a senior at Cozad High School and plans to attend Kearney State College and major in Medical Technology.





# Replacing Winter Losses

By WALTER CRAWFORD  
Massillon, Ohio

THE WINTER of 1977-78 was a bad one for many beekeepers in northeastern Ohio as it was in many other parts of the nation. The deep snow was never melted off before more was added. The long cold spell that kept the bees in the hive, prevented a cleansing flight. A great loss of bees occurred when the sun finally warmed up the hives and the outside temperature was still nearly freezing. The snow was dotted with thousands of bees which would not have left their hive except for their desperate need.

Some lost fifty percent or more of their colonies. My own eight colonies were all living when pollen and nectar was finally available. That isn't saying much, for most were quite weak. One without a queen was united with another weak colony. The early part of the summer was spent in taking brood and bees from the few strong colonies to strengthen the weak ones, and providing food when needed.

Many beekeepers were splitting colonies to replace those which had died out, a process which can drastically reduce the production of surplus honey. Everyone was glad to collect any stray swarms to replenish their reduced apiary. We were fortunate to have a good honey flow in this area in 1978 and most harvested a good crop. The surplus has been extracted and bottled. Honey sales have been good. Things are not so bad so far in the winter of 1978-79 but a certain amount of loss is inevitable.

Fall is the time to see that each colony is heavy with honey. Those in a double brood chamber should be forcing the queen into the lower frames by filling the cells in the upper chamber with nectar as the brood hatches. If brood is scattered in the second or third hive body, all unsealed brood and as much of the sealed brood as it will accommodate, should be placed in the bottom with the unsealed brood in the center. This will insure that the cluster begins the winter in the bottom and can work up into solid honey as needed.

I was desirous of increasing the number of colonies in my own apiary and was fortunate to collect a few swarms in the area. A couple calls were from people who had an unwelcome colony on their property. One was in a large wild cherry tree. The other had located in the eave of their house. The house and soffit was sided with aluminum and provided in-

numerable exits which required many extra trips.

The entrance was where an outside chimney met the soffit. After looking the situation over, I determined to attempt to entice the bees into a hive set up near their entrance. Two 2 by 4's were used for a support for a platform to set the hive on. This was leaned against the siding close to the chimney. An eight frame hive with one frame of brood and bees with a queen cell, and seven frames of foundation, was placed on the platform. After plugging the cracks around the chimney and using a caulking gun on other small openings, the bees were required to use one opening. A bee escape was fashioned from some plywood and strips of metal cut from an aluminum beverage can. This was fastened over the opening. The escape worked just fine. Periodically visits were made to see what progress was being made. Additional caulking and strips or chunks of wood were needed for the bees had found new places to get out. It was next to impossible to seal up all the unwanted exits. The bees would always remove some caulking or find a new place to get out.

The first examination of the hive showed the queen had hatched and had brood in three frames. The project was successful in capturing a large part of the bees in the house in spite of the difficulty in forcing them to use the bee escape. After about four months, the hive was removed to the apiary with all eight frames completely drawn out, and full of honey and bees with six frames of brood.

The colony in the wild cherry tree was confined by nailing old galvanized furnace sheet over five large openings, and using mortar to further seal it. The mortar proved to be much better than caulking compound. The same procedure was used on this colony but a three frame nucleus with a queen, was placed in an eight frame hive with five frames of foundation. When this hive was removed, it was solid with honey and just a little brood in two frames which also had several sealed queen cells attached. The hive was so full of bees, a large cluster was hanging on the outside. I had reduced the entrance to a very small opening to prevent the possibility of robbing when it was first set up. The queen cells were on the sides of the frames as is the case when supersedure occurs. However, due to the crowded condition, they may have been about ready to swarm. Several frames of

bees and brood should have been removed before they had become so crowded.

I have constructed a light box from thin paneling, the same size as a ten frame hive body. A screened window on each side provides ventilation. It has a sliding top, and a sliding door closes the entrance. It holds nine full depth frames set in spacers so that they won't slide around while transporting. This makes light work out of setting up and removing a hive from a platform which will usually require a ladder to reach. The frames of brood and bees or honey can be transferred one at a time from hive to box when necessary, or in the fall when the complete hive full of frames of honey would be too heavy to handle on the ladder. The design of the box is copied from one built by a friend to capture swarms in. The top and entrance are fastened shut so they will not come open while transporting. When the swarm is to be placed in a hive, the box is inverted over a ten frame hive with frames of comb or foundation, with a shallow super between. The bees will be hanging from the cover so the swarm box should be inverted over the hive, and the cover slowly drawn out. The bees will nearly all drop into the empty super. A few bumps on the box will dislodge the rest and the box can be removed. Don't allow them to remain in the box very long for they will begin building comb, and glue the top so that it will be a problem to get it open. When using it to catch a swarm, don't put any frames in it, they will fall out when turned over.

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## PETITION FOR CHANGES IN OHIO APIARY INSPEC- TION LAW

A petition to change certain aspects of the Ohio Apiary Inspection laws is being circulated about the State. Some of the proposed changes are as follows:

1. Eliminate the fee for apiary inspection.
2. Stop the killing of bees and burning equipment of hives infected with AFB.
3. Limit the destruction of a diseased colony to only the infected brood.
4. Research and educate to use safe preventive measures as a means of controlling disease.
5. Where burning of diseased colonies is necessary compensate the beekeeper for the loss.
6. Honeybee inspection should be done only at the request of the beekeeper.



# Package Bees; Their Origin, Their Destination

By HOWARD J. ROCK  
Dale, Wisconsin

ONE BEAUTIFUL evening I was standing on the depot platform, contemplating 1,500 neat packages of bees that were awaiting the arrival of the Southern R.R. crack express train for the North. There were several large orders in the mass of bees and, of course, many orders for one or two packages from eager beginners. I asked my companion, Max, "How long will these ideal conditions for shipping and production last?" He looked at me rather amused and said, "There will always be package shippers, there will always be express trains."

Many changes have occurred since that evening forty years ago but the basics for success with package bees have remained largely the same. Those basics are skill and judgement.

There were basically three different methods for shaking bees in huge quantities. Some producers ran their hives with a double brood chamber and when shaking started each queen was confined to the brood nest one via excluder. Just before shaking, each populous hive was smoked and drummed to get as many bees into the upper brood nest as possible. When executed by an experienced crew the results were fast and good; all young worker bees, no time lost looking for the queen and drones in the package were nil or minimal. When attempted by incompetent beginners, bedlam resulted. I suppose that's why most producers soon abandoned this method.

The most popular method in the South, when I was there, entailed using large crews consisting of queen finders, shakers, craters and "runners" who did whatever was asked of them. The queen finders at my place of employment were unusually fast and smooth. Most times the bees were hardly aware of their presence as they removed the combs to be shaken after leaving the queen back in the hive. The bees were shaken directly into two pound and three pound packages. It was no snap being a shaker. They had an unusual ability to judge when they had two or three pounds of bees in a package. They also knew who the most skilled queen finders were since they didn't care to be stung anymore than they had to. There is a lot to shaking bees under

varying conditions. After all the hives had been worked the crew pitched in as one man, crating, loading and preparing to move on to the next yard. When conditions were normal this crew could turn out 800 packages per working day and I might add that the day usually ended no sooner than 9 P.M.

The third method used for shaking, no doubt the best method, utilized large screen cages. They were three feet long, three feet deep with panels of screen wire on all sides. Into the open center of the top was fitted a removable receptacle made of queen excluders, sides and bottom. This well ventilated shaking receptacle would hold up to twenty pounds of young bees without the danger of suffocation, a very real possibility in shaking large cages of bees. There were two handles on each end of this rectangular box and two men easily carried it to advantageous sites in the yard being worked. Without utilizing time for queen finding, each hive was shaken into this box. The older bees would fly back to their hive but the young bees would gradually pass through the excluders and quietly cluster on the outside screen while the queen was retrieved on the excluder and returned to her hive.

As I said, there is much skill in shaking. Any beginner can thump them off with a mighty jerk but the skilled man adjusts his efforts to conditions. Gentle shaking is the rule, the gentler the better as it minimizes stress on the young bees. They have a lot to do at their destination and anything that adds to their life span is intelligent.

There may be a honey flow on at the time of shaking. An experienced man can shake bees off combs containing fresh nectar without spilling a drop of nectar on the bees. Nectar daubed bees are the easiest to overheat and suffocate that I know of. If you can't shake bees as skillfully as this you have no business on a shaking crew.

When these screen paneled boxes had about eighteen pounds of young bees quietly clustered, they were dipped out into two or three pound packages.

Once back at the shop with enough packages for the days orders, the bees are given a feeder can of syrup and a caged

"If the weather turns bad for a week you are dead."

queen. It is best if the package is fed lightly at this time to be more receptive to the caged queen. Most queens were dry caged without attendants and since hiving thousands of packages I know that they are more successful than queens caged with attendants. The sooner the queen clamors for attention the sooner the bees will accept her.

Once the shipment arrives at its destination the buyer's first impressions are most important. Are the cages well made and neatly crated? The late Garnett Puett was most demanding about this. He said that his package was his calling card.

I well remember the '46 season in Big Timber, Montana. We awaited 1,500 packages from California. There were some delays enroute and on Sunday morning in early April 800 packages were set off by the Northern Pacific express on the depot platform. There was some hurried scrambling for the next several days but everything went off well as our hives were all set out with optimal amounts of honey and pollen, the bees arrived in excellent shape and the weather was cool with a slight drizzle off the Absarokee mountain range, ideal for hiving.

The best efforts of the package shipper can be negated by how the buyer first treats his packages. There are many don'ts. Don't saturate your bees with sugar syrup in the hopes of saving a few hours. Feed them by painting the sides of the cages via a paint brush using heavy syrup, until they won't take anymore. When shaking the bees in the hive don't be quick, be smooth. Don't release the dry caged queen immediately but stop up the cage opening with a small amount of honey and wax so that her egress will be delayed two hours or so. If you find small pieces of fresh comb in the package near the feeder can, be sure that the bees have fully accepted the caged queen. If, with these conditions, you find the caged queen dead, you can be quite sure that somehow the bees' original queen was shaken into the cage with the bees. Don't install package bees on all foundation and expect great success unless you feed plenty syrup and an attractive pollen supplement. If the weather turns bad for a week, you are dead.

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# Common Cause<sup>\*</sup>

I APPRECIATE this opportunity to present to you a problem which is of great concern to me and which I believe should be as great a concern to you.

I believe that no one here will seriously quarrel with me when I adopt the premise that an economically sound tree fruit industry is dependent on adequate pollination and that for adequate pollination the tree fruit industry must rely on the commercial honeybee industry.

At present, Washington State has in production 100,000 acres of apples, 23,000 acres of pears and 12,000 acres of cherries, all dependent on the honeybee industry for pollination service.

Washington State has a commercial honeybee industry which operates an optimistically estimated 80,000 colonies of bees available for tree-fruit pollination service. The USDA crop reporting service lists 66,000 colonies for 1978, but due to the possibility that some beekeepers may not have returned questionnaires and because the variation in blossoming dates in different areas allows some colonies to be set twice, and I believe the total to be somewhat higher. However, the number of colonies of bees in the state has been steadily decreasing. USDA reports 73,000 colonies for 1976; 68,000 colonies for 1977 and 66,000 for 1978.

Using the figure of one strong colony per acre as the minimum requirement for adequate pollination, it is evident that there are not enough bees in the state to service present acreages at the recommended rate per acre. All forecasts indicate a considerable expansion of acreage in the immediate future.

The bee industry is in trouble and the bee colony count in the state is steadily decreasing. Since the tree-fruit acreage in the state is steadily expanding, it follows that the tree-fruit industry is in trouble. Therefore, I come to the conclusion that in their own best interest, the tree-fruit industry must join in "Common cause" with the honeybee industry to seek alleviation of the problems of the honeybee industry.

To solve or alleviate a problem it must first be identified and recognized. The beekeeping industry has the same inflation caused problems common to all farming industries, but, this is not a great concern to us. It is simply solved by a raise in pollination fees. Our major concern is the crippling and often outright destruction of bee colonies by insecticides

applied to crops in the areas where the bees must forage. This constant bombardment is the single limiting factor to the success of our efforts to maintain an adequate supply of bees for tree-fruit pollination.

Unfortunately, Washington has no areas of natural untillied lands that will support any extensive number of bee colonies. Nearly all commercial honeybee operations must pasture in diversified crops areas where they are constantly in jeopardy from many and varied insecticide applications. Even these areas, hazardous as they are, are saturated in so far as the bee populations which they will support. I know of no significant area in Washington where a commercial apiary can be successfully operated without receiving some degree of insecticide damage. The beekeeper has no alternative but to accept this risk. Next in choosing a forage he evaluates the nectar producing plants in the area and balances this against the severity of insecticide damage which his experience has shown he must expect from treatment of the crops grown in the area. I am here to tell you that it is not a very educated or safe evaluation. Changes in the season cause great variation in the degree of insect infestation and in the amount of pesticide which is used and often in the kind of insecticide which is used and temperature variations often enhance the damage that an insecticide will inflict on the honeybee colonies. Once he has made his decision, the beekeeper can only cross his fingers and hope for the best.

Every year seems to bring new insecticides or new formulations of an already used insecticide. Each new insecticide or new formulation seems to be rougher on bees than the one it replaces. It appears, to beekeepers, that new materials and formulations are carefully tested for safety to humans and other warm blooded animals but little attention is paid to the effect they may have on pollinating and other beneficial insects. A case in point is the recently introduced micro-encapsulated insecticides. Beekeepers soon found that bee colonies could not survive in areas where crops were treated with them; and not only did they kill the colonies but contaminated the hives and made it almost impossible to re-establish the colonies in the same equipment. Competent, recognized researchers established and testified that bees cannot survive in areas where this formulation of insecticide is used; yet just this past spring a well financed campaign organized and orchestrated by one of the chemical companies sought to align tree-fruit growers against beekeepers in an attempt to have restrictions on the use of their micro-encapsulated insecticides relaxed or

removed. Their only justification was that it was less expensive.

I submit that this company was not working in the best interests of tree-fruit industry, but rather in their own self-interest. I can only believe that growers who sided with this company were uninformed or misinformed and did not realize the seriousness of the crisis which they are facing in the shortage of pollinating insects.

I submit that the honeybee industry is a small industry with little influence by virtue of the number of people engaged in the industry or by virtue of the value of the honey and beeswax it produces. It is, however, indispensable to the tree-fruit industry and with the backing and influence of the tree-fruit industry in promoting safeguards for pollinating insects it may survive. The tree-fruit industry has far more to lose than does the honeybee industry.

The beekeeping industry is presently doing everything in its power to survive. It is not uncommon for a beekeeper to lose outright or have incapacitated, in so far as being fit for pollination service, one third of his colonies each season. In the past the beekeeper purchased bees and queen to restock his hives. This is no longer an economically viable recourse. Many beekeepers now move their surviving stocks to California and rent them out for almond pollination. The rental fee merely pays the cost of the move, but if everything goes right, the milder climate and the early forage enables the colonies to build up early and sometimes even furnishes extra bees to restock the empty hives from the past season. This has required heavy investment in handling equipment and extra labor expense. The jury is still out as to whether this is an economically justifiable operation: without some improvement in the situation here in Washington, I question if it will enable us to survive.

The mechanization of the bee handling operation has had a spin off benefit to Washington tree-fruit growers in that it enables the beekeeper to give faster and better service and to handle more hives if he is successful in maintaining their survival.

The beekeeping industry, of its own initiative, has implemented a colony strength provision in the Washington State Apiary Law, which enables a grower to call on the state apiary inspection service for an evaluation of his rented colonies if he believes that they are not what they should be. The beekeeping

(Continued on pg. 147)

<sup>\*</sup>Address given by Mr. Elwood Sires, President of the Washington State Beekeepers Association to some 1,600 growers attending the Washington State Horticultural Association meeting in Yakima, Washington.



# Questions and Answers

**Q. Would it be harmful to my bees if I fed them old honey that is left from fall, that was separated from cappings? This honey is very dark. Please advise—J.B., New Jersey.**

A. We must stress that this honey should be fed only when bees are flying freely everyday. Pure granulated sugar syrup should be fed at any other time.

The darkness of the honey may indicate that it contains a higher level of ash or has been overheated, causing caramelization of the sugars. Either condition places an extra burden on the elimination system of confined bees.

☆☆☆☆

**Q. In 1977 the honey flow from soybeans was very good. In 1978 the bees gathered hardly any nectar or honey. We had more moisture in '78 than '77. The hives were setting at the edge of the field. What could account for this? How good a source of honey do you think soybeans are? I have never seen honey from soybeans advertised.—J.B., Indiana.**

A. The question in your letter is a very interesting one. However, I am not certain that we can give you a proper answer. We note from our honey reports that most of the soybean honey in the United States is harvested from the middle states, along the Mississippi River. Apparently soil, weather and other conditions including the variety is responsible for the beans yielding honey in these areas. Apparently people who secure large quantities of soybean honey use it to blend with the other honeys.

It is hard to account for such differences in yearly yields from soybeans. Possibly as different variety was planted in 1978.

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**Q. This Spring I'm considering purchasing several four frame nucs of Carniolans; these nucs use 9-1/8 inch frames. My hives, however, are composed of 6-5/8 inch supers.**

**If I place these nucs above supers filled with foundation, will the queen and bees move down into it?**

**Does transportation of bees in nucs encourage the spread of bee diseases?—K.F., VA.**

A. From our experience, we believe it will be necessary to place the nucleus

underneath the 6-5/8 inch super with foundation in order to get the bees to work in the super.

Any nucleus which is planned for sale and shipment must be inspected at the apiary before it is shipped. We believe that this will very likely guarantee freedom from disease.

☆☆☆☆

**Q. I have a number of supers in which there is some granulated honey. If I put them back on a hive (over an inner cover) before the spring flow starts, will the bees clean them out so that the new crop will not granulate?**

**If not, what can I do?**

A. Placing the partially filled supers with granulated honey over the inner cover does very little in accomplishing the purpose which you desire. We suggest you place these partially filled supers underneath the brood chamber at the earliest possible date in the spring and I'm sure that you will find the bees more willing to carry the honey above or dispose of the granulated honey in some manner.

☆☆☆☆

**Q. Should hives be dug out when covered with snow?**

**My hives had three feet of snow over them for several days. When I dug them out, some bees were on the outside of the hive in the hollow under the snow. When exposed to the light hundreds came out and died in the cold.—T.S., WI.**

A. The subject of winter flights brings more inquiries than any other bee wintering problem. Seeing dead bees lying in the snow after attempted winter flights is evidently disconcerting to nearly every beekeeper, particularly when large numbers of bees litter the area of the hives. A great deal of conjecture surrounds this phenomenon when bees attempt flights at temperatures considered too low for survival.

So many conditions affect individual hives and apiaries (amount, type and color of packing, temperament of bees, hive exposure, health of colony, etc.) during winter that it is nearly impossible to pinpoint the reason why some colonies fly on winter days.

J. E. Geiger, a beekeeper with the Canadian Department of Agr. Beaver Lodge Research Station, Brandon, Mani-

toba had the following to say in a letter to the Red River Apiarists Association; ".....actually this is a normal function that colonies perform....it is presumed that most of the bees that are evicted are old bees. Here, in the research apiary, it can be observed that a colony will expell many bees, while others do not. One colony will lose a lot of bees one day, then another may act this way two or three weeks later. I would say it depends upon where the cluster is located. If the clusters of bees are away from the entrance, then they may not break cluster very often. Do not disturb your colonies until spring."

The late Floyd E. Moeller, of the USDA at Madison, Wisconsin, in a letter to the same organization had the following to say: "The flight of bees from colonies, at subnormal temperatures is usually due to stress within the colony such as nosema disease. Bees sick from nosema will fly at low temperatures, drop to the snow, and become chilled. Their elimination from the colony is desirable. Occasionally some colonies will exhibit the unusual flight that you describe and, upon inspection, such colonies are frequently queenless or abnormal in some way."

H.H.W. Velhuis and F.J. Verheijen of the Laboratory of Comparative Physiology, University of Utrecht, Netherlands (*Apicultural Abstracts*, Vol. 15, No. 4, 1964, Pg. 145) said "It is concluded from experimental results that the heating of hives by sunlight, combined with a reversed ALD (angular light distribution) above snow can cause loss of bees in early spring, the ALD preventing the bees from orienting up an down correctly, with the result that they crash in the snow."

From the January 1979 newsletter of the Red River Apiarists Assoc. newsletter we quote "On a warm day in March bees will fly and the reflection of sunlight from the snow will cause many losses of bees who otherwise would return to the hives. To help in their orientation I place pieces of black tarpaper on top of the snow. Professional beekeepers accomplish the same result by plowing away the snow from in front of their colonies in the early spring."

For information on overwintering bees we suggest you send for the U.S.D.A. bulletin Production Research Report No. 169 titled, **Overwintering of Honeybee Colonies**. Write to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The price is 35 cents each but there is a \$1.00 minimum order by mail.



**Q. I wonder if you could give me some information on the different races of queen advertised so extensively in your columns. I have in the past read something about the characteristics of the different races—Caucasians prone to propolizing, Italians use a lot of winter stores and so on, but I wonder if the present day Italians, Caucasians, Carniolans, etc., are really true to type? Then I also see Starline, Midnite, Hybrids and would like if you could give some information on the meaning of these terms.**

**Enclosed please find check for 2-year renewal. I find Gleanings very informative and would not be without it.—(Rev.) M. Glynn, Sligo, Ireland.**

A. You have touched on a very critical point in your first question regarding the present status of bee race characteristics. It has been my experience, though admittedly limited, and in talking to and listening to other more experienced beekeepers that the average bee reported to be "Italian", "Caucasian", or "Car-

niolan", for example, do not always show the distinctive characteristics each race is supposed to have. It is to the credit of our bee breeders and commercial queen and package producers that our honeybees are propagated reasonably true to race and are sold as such. Maintenance of "types" in the producing colonies is largely uncontrolled unless the beekeeper maintains his own breeding program through artificial insemination.

Hybridizing two or more races of bees is a common result of uncontrolled mating. This is inevitable when colonies of bees showing characteristics of say, Italians and Caucasians are kept within a short distance and interbreeding occurs. Under these circumstances when a queen from one colony mates with drones from another colony the offspring may inherit traits from each parent in a purely random manner.

The hybrid bees which are advertised in the beekeeping journals are the result of controlled mating, in contrast to the random mating described above. The

term "hybridization" assumes a new meaning when controlled breeding, either by instrumental insemination or isolated queen and drone mating yards, is applied. In controlled mating both queen and drone stock are used which have been selected on the basis of observed performance. Selection is for certain desirable traits such as vigor and temperament. These "lines" having the desired traits are genetically "manipulated" so as to obtain a reasonable stable lineage that will reproduce true to a genotype, or certain set of heritable and desirable traits. "Crosses", sometimes rather complex, combine inbred lines to exorcise or repress undesirable traits and bring out the desired, better traits. Racial characteristics, such as color can be maintained in controlled hybridization so there remains distinctive races in commercially produced queens such as the Midnight and Starline.

For additional information on races of bees we refer you to **ABC & XYZ of Bee Culture**, 37th Ed., Races of Bees, pgs. 557-566, or, **The Hive and the Honeybee**, Chapter II, pgs. 19-38.

## NEWS and EVENTS



### OHIO Beekeepers Workshop

A beekeepers' workshop for experienced and beginning beekeepers is being held Saturday, March 24, 1979. Registration begins at 9:30 A.M. The program is from 10:00 to 3:30 P.M.

The workshop is sponsored by the Tri County Beekeepers Association and Wayne County Cooperative Extension Service. It is being held at Fisher Auditorium, Ohio Agricultural Research and Development Center, Wooster, Ohio.

Pre-registration free is \$5.00, which includes a box lunch and workshop. Registration at the door is \$2.00 (for the workshop only). Pre-registration forms must be received by March 14. For pre-registration forms and more information contact: Wayne County Cooperative Extension Office, 428 W. Liberty, Wooster, Ohio 44691. Ph. 216-264-8722.

### CONNECTICUT Beekeeping Short Course

A short course will be given at the White Memorial Conservation Center (formerly the Litchfield Nature Center

and Museum), Litchfield, Conn. The instructor will be Professor Al Avitabile of the University of Connecticut.

The course will consist of four Saturday morning lectures beginning at 9:30 A.M. immediately followed by field trips to bee yards. The dates for the course will be April 7 and 21st and May 5 and 12th.

Demonstrations will include: how to hive package bees and swarms, how to rear your own queens, how to divide colonies, how to manage a two-queen system and many other demonstrations related to bee management.

Cost will be \$23.00 per person for the entire course. For additional information contact either Gordon Loery, Director of the Center at 567-0015 or Al Avitabile at 757-1231 (Ext. 38) area code (203).

### PENNSYLVANIA Mansfield State College Bee Course

A beekeeping short course is scheduled at Mansfield State College, Mansfield, Pennsylvania from May 10 through 12th. Hours on Thursday are 7 to 10:00 P.M., and on Friday and Saturday, from 8:30 A.M. to 5:00 P.M. The instructors are H.

Lee Hoar, W.W. Clarke, and Jeffery Clarke. Students will learn basic beekeeping techniques. Course content will include the history, duties and diseases of the honeybee, equipment, making a start in beekeeping, spring and fall management, swarming and marketing honey. There will be a tour of a local honey house and inspection of colonies on Saturday. The fee of \$36 is payable to the Mansfield Foundation, Inc.

### NORTH CAROLINA Cumberland County Beekeepers Assoc.

The Cumberland County Beekeepers Association meets at 7:30 P.M. on the last Tuesday of each month in the County Office Building Auditorium on Highway 401 South, Fayetteville, N.C.

### MICHIGAN Michigan State University Farmer's Week Beekeeping Program

This annual event will be held Friday, March 23, 1979 at the Auditorium of Kellogg Center and on Saturday, March 24 at B-108, Wells Hall.

The Friday session will begin at 9:30 A.M. and continue through 4:00 P.M. The Friday evening program will begin at 7:30 P.M.



The Saturday program, directed to beginning beekeeping, will start at 9:30 A.M. and conclude at 3:30 P.M. Beekeeping workshops will be in continuous session from 1:30 on Saturday.

#### **CALIFORNIA** **ABF Auxiliary**

The annual American Beekeeping Federation Ladies Auxiliary meeting was held at San Diego, California and the new officers of this organization are: Ruby Kuehl, Loup City, Nebraska—President; Roxanne Allen, Payette, Idaho—Vice President; Phyllis Taylor, Stratford, South Dakota—Secretary-Treasurer.

#### **KANSAS** **Kansas State Beekeepers Assoc.**

The Spring Meeting of the Kansas State Beekeepers Association will be held at the Elks Club, 4th and Mulberry, Abilene, Kansas, on Friday and Saturday, March 30 and 31, 1979.

Friday's activities include registration at 9:30 A.M. with a registration fee of \$1.00 per person being charged. Sessions will begin at 11 A.M. A Dutch-treat smorgasbord will be served at noon. A field trip giving members practical experience in colony manipulation will begin at 1:30 P.M. The State Association Auxiliary meeting will also begin at 1:30 P.M. Following the evening meal, an informal Get-Together will be held beginning at 7 P.M. Saturday's schedule includes registration at 8:30 A.M. (Registration Fee of \$1.00 per person). The noon meal on Saturday will again be a Dutch-treat smorgasbord. Adjournment is set for 4:30 P.M.

#### **WISCONSIN** **ETN Conference**

Wisconsin beekeepers can learn about "Spring and Summer Bee Colony Management" during an Educational Telephone Network (ETN) conference March 1, 8-10 P.M.

Beekeeping experts from University of Wisconsin-Extension (UWEX) and the USDA Bee Research Laboratory in Madison will present the free program.

The speakers said time will be reserved for questions.

If you would like to participate or listen, contact your local county UWEX agent to make sure a room is available.

#### **FLORIDA** **Palm Beach County Beekeepers Assn.**

Forty-three beekeepers of Palm Beach County, Florida met December 1, 1978 and organized an association. Meetings shall be the first Friday of every month at

7:30 P.M. at the Mounts Bldg. Auditorium (county agent's building) next to the Highway Patrol office on Military Trail, West Palm Beach, Florida. Meetings will be open to all beekeepers whose legal residence is in Palm Beach County, Florida. The Association elected the following officers; Pro tem: David Lobdell, President; Malcolm DuBois, Vice-President; R. Henry Ford, Secretary; Neil DuBois, Treasurer; David Wedge, Program Chairman.

#### **GEORGIA** **Beekeeping Program**

The Chattahoochee Nature Center at Roswell, Georgia will offer a Beginner's Beekeeping Program on Tuesday, March 13, 7:30 P.M. The public is invited and there is no charge. The instructors will be Jodie and Barry Semegran, owners of Bee-Jay Farm of Dacula, Georgia. For more information call 992-2055.

#### **MASSACHUSETTS** **37 Th Annual Beekeeping Course**

To be held at the University of Massachusetts Medical School, Worcester, Mass. (located between Plantation Street and Lake Street North, one block north of Rt. 9 on the west short of Lake Quinsigamond). Sessions will take place in Amphitheater III, entrance through the main doors on the west side of the Medical School.

First class is March 1 and continues through April 19, meeting each Thursday evening from 7:00 P.M. to 9:30 P.M.

Registration fee for non-members of W.C.B.A. is \$5.00. For information contact Mr. Waino Jyringi, 31 Wells St., Rochdale, MA. 01542, Tel. 892-4325.

#### **OHIO** **Cuyahoga Community College** **Beekeeping Course**

A non-credit course offered at CCC Western Campus, 11000 Pleasant Valley Rd., Parma, Ohio. Mondays, April 16 through June 11 (8 sessions) 7-8:30 P.M. Fee: \$20.

One field trip will be conducted during the session. Video tapes and slides will be furnished by Ohio State University.

Instructor is William B. Conley, a certified beekeeper instructor from Ohio State University and a trustee of the Ohio State Beekeepers Association.

#### **SOUTH CAROLINA** **Palmetto Beekeepers Assoc.**

The Palmetto Beekeepers Association will hold its spring meeting at the South Carolina Farm Bureau Bldg. in Columbia, S.C. on Saturday, March 17, 1979.

The meeting will begin at 9 A.M. All beekeepers and their families are invited.

#### **OHIO** **Medina County Beekeepers Assoc.**

The Medina County Beekeepers Association meets monthly on the third Monday at the A. I. Root Co. Conference Room on West Liberty St., Medina, Ohio at 7:30 P.M. We welcome new members.

John Clark is President of the Medina County Association.

#### **INDIANA** **Indiana State Beekeepers Assoc.**

March 3, 1979 is the date for the Beekeepers Workshop at the MCL Cafeteria in Greenwood, Indiana. Registration will be \$5.00 for individuals and \$6.00 for families.

Bring the whole family and enjoy a day among beekeepers.

#### **WYOMING** **Wyoming Beekeepers Assoc.**

The annual meeting of the Wyoming Beekeepers Association was held at the Hilton Inn in Casper, WY on December 1 and 2, 1978.

Speakers at the meetings included Dan Bench from the Environmental Protection Agency Office in Denver, Howard Rhodes from the Bee Research Lab at the University of Wyoming and, Leonard Kurtz from Sioux Honey Association.

Officers elected for 1979 were Kenneth C. Miller, Dubois—President; Bill Camp, Casin—Vice President; and Emrie Ann Miller, Dubois—Secretary-Treasurer.

#### **RHODE ISLAND** **Rhode Island Beekeepers Assoc.**

Rhode Island Beekeepers Association will have a beginning beekeepers' course on Sunday, April 1, 1979. Cost is \$3.00 per person. Contact Association President Frank Ekhoft, 4600 Post Road, Warwick, R.I. (Phone 884-1020) for details.

#### **CANADA** **Ontario**

Honey production and pollination of fruit and vegetable crops will be studied in a course entitled, "Beekeepers Workshop Series". Instructor will be Harold Killins, B.S.A. All sessions will be held in the apiary on Saturday afternoons, starting April 28th. Applicants should write Mr. D. Link, Fanshawe College, Community Services, London, Ontario, Canada, P.O. Box 4005, Terminal C. N5W-5H1 or phone (519) 452-4425.



## OHIO Ohio State Beekeepers Association

The spring meeting of the Ohio State Beekeepers Association will be on Saturday, March 10, 1979 at Capital University, Columbus (Bexely) Ohio.

Phil Rossman, a queen and package bee producer will be the principal speaker. Spring management will be the general theme of the meeting.

## GEORGIA Beekeeping I and II

Floyd Junior College is sponsoring a course in Beekeeping I and Beekeeping II. Information is as follows:

**Beekeeping I:** April 3—May 8, 1979; 7:00-9:00 P.M. Tuesdays. Learn how to begin and maintain your own beehive. Topics covered in this exciting program will include how to start with bees, the construction and assembly of beehives, how to requeen the hive, removing the honey, and preparing the bees for winter. Fee: \$15.00. Instructor: John Morris.

**Beekeeping II:** This course is designed to teach the more advanced beekeeper the techniques of making artificial queen cells, the grafting of larva into queen cells, making up the swarm box, making queen mating nucs, the storing of the queen bee, and the building up and division for increase. No pre-requisite necessary. Fee: \$15.00. Instructor: John Morris.

## TENNESSEE Tennessee Bee Disease & Pest Workshop

The first annual Tennessee Bee Disease and Pest Workshop consisting of lectures, laboratory workshops, and field demonstrations on the diagnoses, treatment, and control of various honeybee diseases and pests will be held on Friday, April 6, 1979; 6:00 P.M. to 9:00 P.M. and Saturday, April 7, 1979, 8:00 A.M. to 5:00 P.M. at the Plant Sciences Building, University of Tennessee Agriculture Campus, Knoxville. All State and County Bee Inspectors in Tennessee plus other interested beekeepers are invited. Registration fee of \$5 per person to cover expenses. Advanced registration recommended; registration forms are available from Howard T. Kerr, Pres., TSBA, 2317 Broadway, Maryville, TN 37801. The workshop director is Dr. H. Shimanuki, Chief, USDA Bee Laboratory, Beltsville, MD. The workshop leaders are: Prof. Harry Williams, Univ. of Tennessee; Dr. Charles Pless, Univ. of Tennessee; Mr. Sam Neely, Tennessee State Apiarist; Mr. Tom Hart, Tennessee State Bee Inspector, Dr. John Woods, Tennessee Wesleyan College and Mr. Howard T. Kerr, Pres., Tennessee State Beekeepers Assoc., Inc.

The lectures are: Field Symptoms and Diagnoses of Adult and Brood diseases, Dr. H. Shimanuki; Pesticide Kills versus Diseases, Prof. Harry Williams; Proper Precautions and Procedures for Inspecting Hives, Mr. Sam Neely; Follow-up Procedures when Disease is Found, Dr. John Woods; Proper Use and Care of Medications, Mr. Howard Kerr; Fumigation of Bee Equipment with Ethylene Oxide, Mr. Tom Hart; and Pests and Predators of the Honeybee, Dr. Charles Pless.

The workshops are: Diagnosis of American and European foulbroods, Prof. Harry Williams and Dr. John Woods; Diagnosis of Nosema and Chalkbrood, Dr. H. Shimanuki and Mr. Howard Kerr.

Field Demonstrations are: Ethylene Oxide Fumigation, Mr. Sam Neely and Mr. Tom Hart; Feeding Techniques and Applying Medication, Mr. Howard Kerr and Dr. John Woods.

## JORDAIN DeMUTH HONORED BY FLORIDA BEEKEEPERS



The 8th L.M. Hubbard award is shown being presented by L.M. Hubbard (R) for the Florida State Beekeepers Association to the Florida beekeeper of the year,

Jordain DeMuth, at the annual meeting at St. Augustine, Florida, on October 27, 1978.

## SIGN-UP



DR. JOE MOFFETT, research entomologist at the Carl Hayden Honeybee Research Center in Tucson, AZ registers for a door prize at the Root display during

the Oklahoma State Beekeepers' Meeting. Dave Tuttle of The A.I. Root Company, San Antonio, TX is tending the booth.



## Italian Bees & Queens

### POSTAGE PAID:

| In lots of | Queens | 2-w/queen | 3-w/queen |
|------------|--------|-----------|-----------|
| 1-24       | \$6.00 | \$20.00   | \$24.00   |
| 25-99      | 5.50   | 19.50     | 23.50     |
| 100-up     | 5.00   | 19.00     | 23.00     |

### TRUCK ORDERS:

|        |         |         |
|--------|---------|---------|
| 1-99   | \$16.50 | \$21.50 |
| 100-up | 16.00   | 21.00   |

## BUSBY'S APIARIES

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## PACKAGE BEES ? ?

Avoid postal problems. Try our fast dependable service direct to the north eastern states and eastern Canada.

### Marason Honey Ltd.

890 Denison Cres, Ottawa, On., Can. K2A 2N5

Phone: 613 729-9981

### FARRIS HOMAN

### SHANNON, MISSISSIPPI 38868

| PACKAGE BEES - Headed with either strain queen - CAUCASIAN or ITALIAN |        | They Rank Tops in Honey Production |           |
|-----------------------------------------------------------------------|--------|------------------------------------|-----------|
| Shipments Start April 15th                                            |        |                                    |           |
| In Lots Of                                                            | Queens | 2 lb. W/Q                          | 3 lb. W/Q |
| 1-24                                                                  | \$5.50 | \$16.00                            | \$20.00   |
| 25-99                                                                 | 5.10   | 15.25                              | 19.75     |
| 100 Up                                                                | 5.00   | 14.50                              | 18.75     |

Above price does not include shipping charges on pkg. bees. Queens PP Airmailed, 25¢ ea. extra for marking & clipping. Please make remittance 15 days prior to shipping date.

## MRAZ QUEENS

1-10 .... \$6.00 11-99 .... \$5.75 100 up .... \$5.50

10% to Book 25¢ Clip or Mark add 70¢ per order for 10 Queens or less.

## Clear Run Apiaries

AMOS McLAMB PO 27 HARRELLS, NC 28444

Ph: 919-532-4782

### AVAILABLE FOR 1979 SEASON

#### STURDY

Italian Queens Nucs Package Bees

Your laying Queens

1-9 10-24 25-99 100 up  
\$6.00 \$5.75 \$5.50 5.25

Package Bees

3 lbs \$23.00 \$22.50 \$22.25 \$22.00  
4 lbs 27.00 26.50 26.25 26.00

NUCS

4 or 5 frames with Brood & Laying Queen

4 Frames - \$24.00

5 Frames - 30.00

(New frames & Wax exchanged)

(Not assembled accepted)

If required, we can make up Nucs in your equipment, at reasonable prices.

Can arrange for delivery of reasonable amounts of NUCS.

### ALSBROOKS HONEY

### BEE FARMS

4 Chappell Creek Rd. Hopkins, S.C. 29061  
Phone: (803) 776-5043

### QUEENS AIR-MAIL

|        |             |
|--------|-------------|
| 1-25   | \$5.00 each |
| 25-100 | 4.75 each   |
| 100-up | 4.50 each   |

### CALLAHAN & SON BEE FARM

EUGENE CALLAHAN

Box 31F Theriot, LA 70397

Ph. 504-872-5956

### PACKAGE BEES; THEIR ORIGIN, THEIR DESTINATION

(Continued from pg. 139)

Apiary sites for installing package bees should be as ideal as possible including good air drainage, wind protection, full sunlight at mid-day. If you can find such a place next to a tamarack swamp you have it made as bees within easy flight of a swamp will find excellent sources of pollen and fresh nectar from willows. However, the weather must be with you so make all the hives well provisioned.

## Griffin Apiaries Company

Starline and Italian

| STARLINE | 1-24   | \$5.90 |
|----------|--------|--------|
|          | 25-99  | 5.70   |
|          | 100-up | 5.60   |
| ITALIAN  | 1-24   | \$5.50 |
|          | 25-99  | 5.39   |
|          | 100-up | 5.20   |

Queens Available March 15th

Breeders of Quality Queens

## Griffin Apiaries Company

P.O. Box 345 Bartow, FL 33830

Phone: 813-533-1839

813-533-5735 (home)

813-533-1788 (after 5)

10% deposit on orders

About three weeks after installation, even good packages need a shot in the arm, either hatching frames of brood or about a pound of bees shaken from your own established colonies. If you have no established hives that have wintered well then you are largely out of luck or as the Spanish say, "Mala suerte!"

It all comes down to doing the best you can with your own peculiar resources, but there is no arguing the fact that quality package bees are a great advantage, one big factor in success and profit.

### GLEANINGS MAIL BOX

(Continued from pg. 116)

supers then add our honey supers as we need them. After the honey flow is over, the crop harvested, and at the time we remove the excluder prior to winter packing, we remove the middle shallow super and extract any honey that might be in it. We place the second deep hive body which is filled to the bottom bars with honey back on to the first hive body and know they have enough honey for winter.

As you stated, it is natural for the bees to leave a portion of the second hive body empty waiting for the queen to move up. If the fall flow is strong normally the second hive body would be full to the bottom bar but in areas where the fall flow is undependable this isn't always the case. Our manipulations have worked to solve the problem and guarantee us a full two hive bodies.

Incidentally, this is not our original idea. We were schooled by Mr. Frank Hurshka, past president of the American Beekeeping Federation, an excellent long-time beekeeper. Following his methods we have a hope to continue to have excellent success handling the bees.—Linda Van Andel, Ellsworth, MI.



## YOUR livelihood -- Success or failure?

Why not utilize the very best? Insure the finest honey crop available. USE THE ONE PROVEN PERFECTED STOCK available ONLY from

### BERRY'S

"Old Reliable" Hybrid Italian Bees Preferred by Leading Honey Producers  
PRICES THRU MAY 20th — 10% REDUCTION AFTER THAT DATE

|                | 1-24    | 25-99   | 100 up  |
|----------------|---------|---------|---------|
| Queens         | \$ 6.00 | \$ 5.75 | \$ 5.50 |
| 2 lb. pkg. w/q | 17.00   | 16.50   | 16.00   |
| 3 lb. pkg. w/q | 21.00   | 20.50   | 20.00   |
| 4 lb. pkg. w/q | 25.00   | 24.50   | 24.00   |
| 5 lb. pkg. w/q | 29.00   | 28.50   | 28.00   |

Tested Queens \$2.00 each extra.

For prices on queenless pkgs., deduct \$3.00 for queen.

Now booking 1979 orders. Shipment made by your car, truck, or trailer. Deduct 75¢ each for your usable screen cages from above price. Book early for most desirable shipping dates. 10% deposit required for booking—balance due two weeks prior to shipping date. MAY WE BOOK YOUR ORDER NOW? Parcel Post Orders; Postage, Insurance and Special Handling when available.

2-lb. package \$4.50 ea. 3-lb. package \$5.00 ea.

4-lb. package 5.50 ea. 5-lb. package 6.00 ea.

Prices Subject to Change Without Notice.

Queens postpaid airmail—no extra charge. Packages F.O.B. Shipping Point

Queens clipped, 20¢ each extra. Clipped and marked, 40¢ each.

Postage must accompany all parcel post orders.  
References: Union Bank & Trust Co., Montgomery, Ala.; Any  
Bee Journal in U.S. or Canada; any Extension Agent.

## M. C. Berry & Sons Montgomery, Ala. 36101

P.O. Box 684 Phone: 205-262-0668 or 205-269-9998

Eighty-two years of Select Breeding with the Bees Accredited and Certified — The Best in America

### ITALIAN QUEENS

1-24 .. \$5.50 25-100 .. \$5.00  
101-up .. \$4.50 Virgins .. \$2.50

FLOYD'S APIARIES

Rt. 1, Box 328 Deville, La. 71328  
Phone 318-466-5289

### ITALIAN QUEENS ONLY

Health Certificate Included

Queens \$4.25 each air mail postpaid

Clipping 25¢ & Marking 25¢

GULF COAST BEE CO.

SCHRIEVER, LA. 70395

### QUEENS

#### CAUCASIAN

|         |        |
|---------|--------|
| 1-10    | \$6.40 |
| 11-39   | 5.90   |
| 40-99   | 5.55   |
| 100-499 | 5.25   |
| 500-up  | 5.05   |



#### MIDNITE

|         |        |
|---------|--------|
| 1-10    | \$6.80 |
| 11-39   | 6.30   |
| 40-99   | 5.95   |
| 100-499 | 5.65   |
| 500-up  | 5.45   |



On all orders and shipments of less than 10 queens, add \$1.00 per shipment.

For clipping and-or marking add 50¢ per queen.

HOWARD WEAVER & SONS

Rt. 1 Box 16-A Navasota, TX 77868 Phone 713-825-7714

### PARCEL POST PACKAGE BEES

2 lbs. with queen, \$25.00  
3 lbs. with queen, \$30.00

ITALIAN QUEENS

1-4, \$6.50; 5-25, \$6.00

CARNIOLAN QUEENS

1-4, \$7.50; 5-25, \$7.00

3-FRAME NUCS

Loaded with bees, sealed brood and a young queen.

1-3, \$38.50; 4-25, \$35.00

Prices include shipping, insurance and special handling. 20% books order. Write or call for prices of larger orders.

HIGH SHOALS APIARIES

High Shoals, GA 30645

(404) 769-6638

### WILDWOOD APIARIES

Box 161, Starkville, Mississippi 39759 Ph (601) 323-2341

### MRAZ QUEENS

FRUGAL PRODUCTIVE DISEASE RESISTANT

Booking orders for 1979 Queens from about April 5, depending on weather.

1-10 ..... \$6.00 11-25 ..... \$5.75 26 & up ..... \$5.50

Clip or mark 25¢ 1-10 Cash with order.

11 & up 15% to book, balance due 15 days before shipment.

LIVE DELIVERY GUARANTEED TO U.S. & CANADA. PRICES SUBJECT TO CHANGE WITHOUT NOTICE. Queen yard manager is Page Simpson, who has been working bees since 1928 and producing good Queens since 1949.





## ITALIAN PACKAGE BEES & QUEENS

Bees Bred for Honey Production

| In lots of | Queens | 2-lb. w/qn. | 3-lb. w/qn. |
|------------|--------|-------------|-------------|
| 1-24       | \$6.50 | \$18.25     | \$23.50     |
| 25-99      | 8.00   | 17.50       | 22.75       |
| 100 up     | 5.50   | 16.75       | 22.50       |

20% Down Books. Please Add Sufficient Postage.

**Quality Satisfaction & Dependability**

with personalized service

**DONALD E. RUSHTON APIARIES**

Rt. 6, Box 15 LAUREL, MS 39440 Ph: 601-428-4003

## ALL PURPOSE ITALIAN QUEENS

Bred for the honey producer, the pollinator the pollen collector. Gentle enough for city back yards.

Available March 20 through June 1, 1979

|                     |       |        |
|---------------------|-------|--------|
| Laying mated queens | 1-5   | \$5.75 |
| Air mail postpaid   | 6-20  | 5.00   |
| Clipping no/chg.    | 21-49 | 4.75   |
| Marking 20¢         | 50-up | 4.50   |

No package bees

**Hel-Le Bee Farm**

P.O. Box 95

Phone: 904-468-1494

Hampton, FL 32044

## ITALIANS (Postage Paid)

| In Lots of | Queens | 2-lb. & Qn. | 3-lb. & Qn. |
|------------|--------|-------------|-------------|
| 1-24       | \$5.00 | \$20.00     | \$24.00     |
| 25-99      | 4.90   | 19.50       | 23.50       |
| 100 up     | 4.75   | 19.00       | 23.00       |

|           |              |                   |
|-----------|--------------|-------------------|
| 1-99      | TRUCK ORDERS | 100 up            |
| 2-lb. w/q | \$16.75      | 2-lb. w/q \$15.75 |
| 3-lb. w/q | 20.75        | 3-lb. w/q \$19.75 |

Payments in full 15 days prior to shipping date.

**HARDEMAN APIARIES Mt. Vernon, GA 30445 Ph: 912-583-2710**



## Better Bred Queens Three Banded Italians

### QUEENS

|             |        |
|-------------|--------|
| 1 thru 4    | \$6.25 |
| 5 thru 24   | 5.75   |
| 25 thru 99  | 5.50   |
| 100 or more | 5.00   |

### PACKAGES

|              |              |
|--------------|--------------|
| 2 lb. w/q    | 3 lb. w/q    |
| \$22.50 ppd. | \$27.50 ppd. |

Truck prices 16.00 21.00

It pays to advertise. Our records are unchallengeable. You should see the many good testimonials we get from our many satisfied customers to prove the above statement. We are making preparations to give the same good Queens and service in 1979.

A. L. Webb Sr., Manager  
Jessie S. Knox, Secretary

205-829-6183  
205-829-6074

**CALVERT APIARIES INC.**

**CALVERT, ALA. 36513**

## QUALITY ITALIAN QUEENS

|        |        |        |        |
|--------|--------|--------|--------|
| 1-25   | 26-50  | 51-99  | 100-up |
| \$5.10 | \$4.95 | \$4.85 | \$4.60 |

Clipped 25¢

Marked 25¢

We are now booking for 1979 season.

**ARKANSAS APIARIES**

500 E. Market

**SEARCY, ARK. 72143**

Ph: 501-268-3581

## COMMON CAUSE

(Continued from pg. 140)

industry is actively seeking protective regulation of insecticides.

In summary, believe me when I say; the honeybee industry is not seeking to ban the use of insecticides. We realize that they are a necessity. We believe that efforts must be increased to develop alternatives to chemical insecticides and until suitable alternatives are developed the emphasis must be toward the use of the most selective insecticides and toward the use of insecticides least harmful to beneficial insects, even though the immediate cost may be higher. If this is not done the honeybee industry cannot survive and without an adequate supply of pollinators, it will make little difference whether a grower has available the most cost efficient insecticide.

All available bee forage areas in the state are needed so zoning of certain areas for unrestricted use of extremely bee hazardous insecticides only serves to limit the supply of pollinators.

An increase in pollination rental fees, while it will be necessary to compensate for inflating expenses, will not put bees back into insecticide killed hives nor will it enable enough beekeepers to stay in business to supply adequate pollination service.

The only answer is for the fruit industry to join in "Common Cause" with the honeybee industry to seek and to implement ways and means to protect this vital asset which is in imminent danger of collapse. Make sure that you are bee protection conscious in your own operation and actively participate with the bee industry in its efforts to protect itself and to survive.

IT is every bit as much your cause as it is the bee industries cause.

As President of the Washington State Beekeepers Assn., I pledge the full cooperation of the beekeeping industry.

## MONTHLY HONEY REPORT

(Continued from pg. 110)

cleansing flight needed. Awaiting a Chinook wind to warm record cold and snowfall. May have high winter bee kill.

**Colorado**-Continual cold temperatures and excessive snowfall has kept bees from cleansing flights. Retail honey prices have advanced due to increased container costs.

**Washington**-Colder than usual weather. Bees in good condition.

**Oregon**-Bees in good condition. Moisture conditions good.

**California**-Bee condition good. Moisture conditions satisfactory.





# CAL-ALASKAN APIARIES

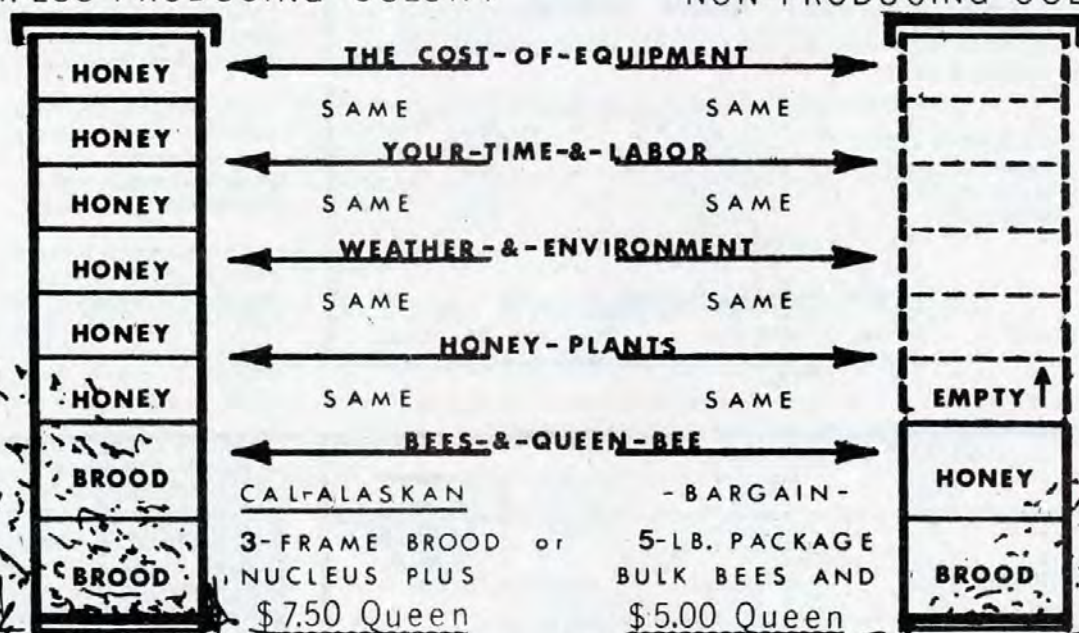
SURETY-BONDED DELIVERY SERVICE

FROM SOUTHERN CALIFORNIA

## What's The Difference?

SURPLUS-PRODUCING COLONY

NON-PRODUCING COLONY



(SEND FOR OUR FREE BROCHURE NOW!)

SUMMARY: THERE IS ONLY \$2.50 DIFFERENCE BETWEEN THEM!

**-ARE YOU PAYING TOO LITTLE FOR YOUR QUEENS ???**

### TWO-THIRDS FRAMES OF SEALED BROOD WITH BEES

|                                            | Quantity: 1-10 | 11-UP |
|--------------------------------------------|----------------|-------|
| 2-FRAMES OF SEALED BROOD W/HYBRID QUEEN    | \$ 26.90       | 25.50 |
| 3-FRAMES OF SEALED BROOD W/HYBRID QUEEN    | \$ 33.90       | 32.50 |
| 4-FRAMES OF SEALED BROOD W/HYBRID QUEEN    | \$ 41.90       | 40.50 |
| ALASKAN-SUN HYBRID QUEENS, TESTED, MARKED  | \$ 7.50        | 7.00  |
| HASTINGS' CARNIOLAN QUEENS, TESTED, MARKED | \$ 6.50        | 6.00  |

(Write For Prices On Larger Quantities)

NOTE: F.O.B. LOS ANGELES OR \$7.50 EXTRA EACH NUC - POSTPAID\*

(WILL REFUND THE DIFFERENCE. WE DELIVER ORDERS OF 100 OR MORE NUCS ANYWHERE AT COST)

326 S. Motor Avenue  
AZUSA, California 91702



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Ph: (907) 349-5515, Ed Melers



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MAYHEW, MS. 39753

Phone: 601-327-7223

## ITALIAN

## STARLINE

### PARCEL POST PACKAGE BEES AND QUEENS

| In Lots of | Queens | 2-lb. & Queen | 3-lb. & Queen | 4-lb. & Queen | 5-lb. & Queen |
|------------|--------|---------------|---------------|---------------|---------------|
| 1          | \$6.20 | \$25.75       | \$31.50       | \$37.00       | \$42.75       |
| 2-24       | 6.20   | 23.75         | 29.25         | 35.00         | 40.75         |
| 25-99      | 5.65   | 22.50         | 28.25         | 34.00         | 39.75         |

WRITE FOR PRICES FOR 100 AND UP

PRICES INCLUDE POSTAGE, SPECIAL HANDLING, AND INSURANCE FEES.

STARLINES ARE 50¢ EXTRA.

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

Live delivery can only be guaranteed until May 20, on package bees. We may run late on shipping, but will come as near as possible to your desired shipping date.

TESTED Queens will NOT be available until after May 20th and are \$1.00 Extra. Marking of Queens is 25¢ per Queen.

### QUEENS AND PACKAGES TO BE PICKED UP AT OUR APIARY

| In Lots of | Queens | 2-lb. & Queen | 3-lb. & Queen | 4-lb. & Queen | 5-lb. & Queen |
|------------|--------|---------------|---------------|---------------|---------------|
| 1-24       | \$6.20 | \$18.00       | \$23.50       | \$29.00       | \$32.50       |
| 25-99      | 5.65   | 17.25         | 22.50         | 28.00         | 32.00         |
| 100-up     | 5.15   | 16.50         | 21.75         | 27.00         | 31.00         |

We are booked up until May 6, 1979. We can take order for that time.

## PACKER CHARGED WITH ADULTERATION OF HONEY

The packer of Wild Mountain Brand Honey, H.W. Pilgrim, Sorghum, of Dekalb, Mississippi and Pond Products Company of Cambell, CA (dealer) has been charged by the FDA with adulterating and misbranding honey. The charges were filed on December 19, 1978 in U.S. District Court for the Northern District of California at San Francisco.

### DO YOU NEED INCREASE ??? I'M TOO LARGE WANT TO BEE SMALLER

3 - 5 Frame Nucs

Singles, Doubles

79 Queens

April - June

Call for Price, Quotation and Delivery Arrangements

REX HAUETER (916) 273-3702

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GRASS VALLEY, CALIF. 95945

# 1979 Catalog

Our 1979 catalogs will be in the mail in early February and if you bought equipment in 1978 you should automatically receive a copy but if not ask for a copy. We have been in business 55 years and have kept bees 70 years so know what you need and offer many items not found in the other supply catalogs. Over half a million dollars worth of stock on hand. Most orders shipped the same day as received.

**THE WALTER T. KELLEY CO.**

Clarkson, Kentucky 42726



# QUEENS

## HYBRID ITALIANS

Now booking for 1979 season

Available spring thru fall

|        |        |                |
|--------|--------|----------------|
| 1-24   | 24-99  | 100 up         |
| \$5.00 | \$4.50 | call for quote |

## DIXIE HONEY CO.

Rt. 1, Box 350 Shallotte, N. C. 28459  
Phone: 919-579-6036

Bank Reference: Bank of North Carolina  
919-278-6951

## ITALIAN PACKAGE BEES AND QUEENS

### NO DRONES

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

| With Qns. | 2-lbs.  | 3-lbs.  | 4-lbs.  | 5-lbs.  | Queens |
|-----------|---------|---------|---------|---------|--------|
| 1 -24     | \$17.00 | \$21.50 | \$26.00 | \$31.00 | \$5.90 |
| 25 -99    | 16.25   | 20.75   | 25.25   | 30.25   | 5.55   |
| 100-up    | 15.75   | 20.25   | 24.75   | 29.75   | 5.15   |

Clipping Queens 40¢ each. Marking 40¢ each.

For queenless packages deduct \$3.00 from the above prices.

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

Packages can be shipped only by parcel post or your transportation. Get away for a few days, pool your order with your neighbor, pick your bees up here and save the postage. Deduct 75¢ each if you bring your own usable cages. \$2.00 deposit per package required to book your order—balance due 15 days prior to shipping date. For most desirable shipping dates book your order early.

Prices subject to change without notice.

Shipping Dates April 1st thru May 20th.

## JACKSON APIARIES

P. O. Box 159 Funston, Ga. 31753  
Phones: 912-941-5522 912-941-5410

## SPANISH FORT BEE SUPPLIES

2-lb. pkg. .... \$16.00  
3-lb. pkg. .... 19.00  
Queens ..... 5.00 ea.

Write for Prices

Box 309  
STAPLETON, ALA. 36578  
Phone 205-937-3577

NOW BOOKING ORDERS FOR 1979

## KEYLINE QUEENS AND PACKAGES

ORDER NOW AND AVOID DELAY— FIRST COME FIRST SERVED.

Write for Brochure and/or Price List.

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## MRAZ QUEENS

BEE ISLAND APIARIES  
Harrells, N.C. 28444

Ph:(919)285-2029 or 285-7450

## CAUCASIAN QUEENS

1-25 ..... \$4.85  
26-100 ..... \$4.75  
101 & up ..... \$4.65

## VAUGHN APIARIES

P. O. Box 3116  
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## TESTED QUEENS

Caucasian and Italian from double grafted cells mated in Fumid-B fed nucs, all are clipped and marked free including airmail and insurance ppd. Booking now, shipping March 15th to May 1st only 25 and up \$6.00 ea.

DAVID MIKSA  
Phone (904) 429-3447

MIKSA HONEY FARMS  
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## Featuring BUCKFAST Queens

Ask for our literature

**"SORRY, SOLD OUT UNTIL MAY"**

|        |           |        |                      |
|--------|-----------|--------|----------------------|
| QUAINT | 1 - 4     | \$7.50 | POSTPAID             |
|        | 5 - 31    | 6.25   | For clipping add 25¢ |
|        | 32 - 99   | 5.65   | For marking add 35¢  |
|        | 100 - 999 | 5.25   | both C/M add 60¢     |
|        | 1000 & up | 5.15   |                      |

Write for Package Bee prices and available delivery dates.

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Established 1888 Phone 713-825-2312





### 3 FRAME NUCS \$28.00

|       |                |       |         |
|-------|----------------|-------|---------|
| 1-50  | 2-lb. pkg. w/q | ..... | \$16.00 |
| 51-up | 2-lb. pkg. w/q | ..... | 15.75   |
| 1-50  | 3-lb. pkg. w/q | ..... | 21.50   |
| 51-up | 3-lb. pkg. w/q | ..... | 20.75   |

Will deliver Des Moines, IA, St. Paul, MN  
and Terre Haute, IN.

Write for details. Limited Bookings

## D & D APIARIES

Doug Lambertsen & David Mitchell

Box 72

Forest Hill, La. 71430

Phone 318-748-8955

### 1979 PRICE LIST

#### ITALIAN QUEENS

|                                                                                                                                           |       |        |        |       |        |
|-------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|--------|-------|--------|
| 1-99                                                                                                                                      | ..... | \$5.89 | 100-up | ..... | \$5.30 |
| Marking 50¢. All queens shipped air mail. \$1.00 deposit.<br>per queens required to book order. Balance due 10 days<br>prior to shipping. |       |        |        |       |        |

#### PACKAGE BEES — — PARCEL POST

PRICES INCLUDE POSTAGE, HANDLING FEE, INSURANCE,  
AND SPECIAL HANDLING. WE DO NOT GUARANTEE LIVE  
DELIVERY.

|    |   |                     |
|----|---|---------------------|
| 2# | — | \$25.00 per package |
| 3# | — | 30.00 per package   |

#### PACKAGE BEES F.O.B. MOULTRIE

|    |       |         |         |         |
|----|-------|---------|---------|---------|
|    | 1-9   | 10-99   | 100-699 | 700 up  |
| 2# | ..... | \$18.30 | \$17.11 | \$16.18 |
| 3# | ..... | 22.81   | 21.62   | 20.69   |
|    |       |         |         | 20.34   |

\$1.00 ALLOWANCE FOR USEABLE CAGE WITH COVER BLOCK.  
QUEENLESS PACKAGES DEDUCT \$3.50 FROM ABOVE PRICES.  
\$3.00 PER PACKAGE DEPOSIT REQUIRED TO BOOK ORDER.  
BALANCE DUE 10 DAYS PRIOR TO SHIPPING DATE.

All Prices Subject to Change Without Notice.

" THEY PRODUCE "

## ROSSMAN APIARIES, INC.

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MOULTRIE, GA. 31768

Ph: Area 912/985-7200



# QUEEN BOX!

ONLY \$9.95

plus \$3.00 up/p

MAXANT INDUSTRIES

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AYER, MASS., U.S.A. 01432

### CUTTING QUEEN CELLS? THROWING THEM AWAY?

Raise your own queens and become a BEE-MASTER! A one  
piece moulded styrofoam mating box, complete with 3 small  
frames, inside feeder and cover.

#### With Detailed Instructions !

Send \$2.00 for Instruction Book. Contains Valuable Hints on  
Swarm Control. Deductable on Queen Box Ordered Within  
60 Days.

So Easy to Use, Don't Deny Yourself the Thrill & Fun of Raising  
Your Own Queens for Nucs, Requeening and Swarm Control.

### QUALITY MATED QUEENS

Italian and Caucasian

|        |        |        |
|--------|--------|--------|
| 1-24   | 25-99  | 100-up |
| \$6.00 | \$5.50 | \$5.00 |

Fumidil-B Fed

LIVE DELIVERY AND  
PROMPT SERVICE  
NUCS AVAILABLE

#### GLENN APIARIES

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Phone 714-728/3731

### STRONG ONE STORY BEE HIVES \$52 per hive. Discounts large quantities. 3 FRAME NUCS WITH SUPERIOR QUEENS \$30.

Discounts on large quantities.

Minimum order 5 hives.

Available  
February and March  
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Minimum order 5 nucs.

Available  
April, May, June  
in New York State

NORMAN SHARP

384 FISHERS ROAD  
FISHERS, NEW YORK 14453  
Phone (716) 924-2747





## STARLINE QUEENS

by Dadant

Order now for 1979 season

1-24  
\$5.50

25-99  
\$5.00

100 up  
call for quotation

Terms: Under \$100.00 cash with order, over \$100.00 - 25% with order. Balance three weeks prior to shipping date.

## QUEENLINE APIARIES

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Phone: 919-579-6036

Bank Reference: Bank of North Carolina 919-574-4345





### SUNDANCE

3 Frame
5 Frame

#### CORRUGATED NUC BOX

Transport Bees On Frames  
Pollination Unit  
Splitting Hives  
Screened Lid  
Lightweight  
Wax Coated

Swarm Catcher  
Water Resistant  
Easy Assembly  
Economical  
Solid Lid  
Reusable

Think Spring!  
Order Early



3 frame sample send \$3 5 frame sample send \$3.50  
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Foreign countries, Alaska and Hawaii add \$2

For information write:  
Sundance Honey Company  
420 Via Del Monte  
Oceanside, California 92054  
(714) 439-1572



## Italian Queens

Production dedicated to the advancement of Apiculture, for as claimed by Elisha Gallup, "... around the Queen centers all there is in Apiculture."



1-24 .... \$6.25    25-up .... \$5.75

Clipped & Marked —\$.50 each

## Queen's Way Apiaries

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## QUEENS

### Italian

Nice large queens

Marking 50¢

1-24  
\$6.00

25-99  
\$5.50

Clipping 50¢

### Caucasian

100-up  
\$5.00

2,000 three frame nucs, laying queens and brood ready April 16th on. \$32.50 each delivered. \$28.00 each on your truck. Over 5,000 nuclei producing queens. Fumidil-B fed to nuclei. Queens are personally reared and guaranteed in quality and live delivery

Order 1 or 1,000

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Bunkie, LA 71322

Ph. 318-346-2176

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These queens are proven honey producers. Large well-developed Queens. Health Certificate, airmail postpaid. Add 70¢ special handling charge.

1-9 ..... \$4.75    10-49 ..... \$4.50  
50-up ..... 4.25    Clip or mark 25¢ea.

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## STARLINE QUEENS

1-25 ..... \$6.00

26-99 ..... 5.75

100-up ..... 5.50

10% Books. Balance before shipment.

Jimmie & Kay Oakley

P.O. Box 124

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Ph. 713-245-1978

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### QUALITY BRED CAUCASIAN & ITALIAN BEES & QUEENS

2-lb. w/q ..... \$15.00

3-lb. w/q ..... \$19.00

Queens ..... \$4.50

Queens postpaid airmail

Health certificate furnished

Shipping starts April 15th

Above price does not include shipping charge on package bees.

## HOLDER HOMAN APIARIES

Rt. 2, Box 123-B SHANNON, MS. 38868    Ph. 601-767-3880



# ITALIAN Queens CHARNOCK APIARIES

Book early — 20% books order

Minimum order 15 queens

Available through May 15th

1979 PRICES

\$4.95 Each

**CHARNOCK APIARIES**

2839 Chickamauga Ave.

W. PALM BEACH, FLA. 33401

Phone: 305-683-3654

## ITALIAN PACKAGE BEES

### PARCEL POST PACKAGE BEES & QUEENS

|           | 1-9     | 10-24   | 25-99   | 100-up  |
|-----------|---------|---------|---------|---------|
| 2-Lb. W/Q | \$22.00 | \$21.00 | \$20.00 | \$19.00 |
| 3-Lb. W/Q | 26.75   | 25.50   | 24.50   | 23.50   |
| 4-Lb. W/Q | 33.50   | 32.00   | 30.75   | 29.50   |

Above prices include postage, special handling insurance, and handling fees. Packages can only be shipped PARCEL POST. If packages arrive in damaged condition. File claim for Insurance.

### PRICES ON PACKAGES PICKED UP AT APIARY

|        | QUEENS  | 2-lb. w/q | 3-lb. w/q | 4-lb w/q |
|--------|---------|-----------|-----------|----------|
| 1 -24  | \$ 5.50 | \$16.50   | \$21.00   | \$26.50  |
| 25 -99 | 5.25    | 16.00     | 20.50     | 26.00    |
| 100-Up | 5.00    | 15.50     | 20.00     | 25.50    |

WRITE FOR DELIVERED PRICES  
BY OUR TRUCK.

QUEENS POSTPAID, AIRMAIL.  
NO EXTRA COST.

Small orders CASH. Large orders \$2.00 pr. package deposit. Balance THREE WEEKS before shipping date.

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Ph: 601-648-2747

## BANAT STRAIN CARNIOLAN QUEENS

\$6.00 each

1.5 kg. package \$32.00 ppd.

**GITTA APIARIES**

DENTON, MD 21629



### QUEENS

Two good strains of bees. Very gentle and good workers.

|          | Dadant's Starline | Our Regular Italians |
|----------|-------------------|----------------------|
| 1 to 24  | \$6.75            | \$6.25               |
| 25 to 99 | 6.00              | 5.50                 |
| 100 - up | 5.50              | 5.00                 |

Clip and Mark 50¢ each.

**GEO. E. CURTIS & SONS, INC.**

P.O. Box 507, LaBelle, Fla. 33935 Phone 813-675-1665, 675-1566 or 675-1871



## 1979 PRICES ITALIAN QUEENS AND BEES

| W/q        | 1-24    | 25-99   | 100 up  |
|------------|---------|---------|---------|
| 2-lb. pkg. | \$15.25 | \$15.00 | \$14.50 |
| 3-lb. pkg. | 19.50   | 19.00   | 18.50   |

Packages shipped F.O.B. Baxley, Ga.  
WRITE OR CALL FOR LARGER  
ORDER PRICES

### QUEEN PRICES

Postage Paid—Add 70¢ Special  
Handling to Total Orders for  
10 or Less.

ALL QUEENS FED FUMIDIL-B

Until June 15 After June 15

|       |        |        |
|-------|--------|--------|
| 1-24  | \$4.35 | \$3.00 |
| 25 up | 4.25   | 2.75   |

Queens Marked 20¢ ea. Clipped 20¢ ea.  
Tested Queens 50¢ ea.

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

**Plantation Bee Company, Inc.**

P.O. Box 1087, 105 Brinson Road  
VIDALIA, GEORGIA 30474  
Telephone: 912-537-9249

## QUALITY BRED

## ITALIAN QUEENS AND BEES

Bred for Honey Production and Winter Hardiness.

WE are now booking for the 1979 Season.

Queens ..... \$4.50 each Air Mail  
Three frame nucs with queen \$30.00 each

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# YORK'S--- Quality Bred

1 STARLINES

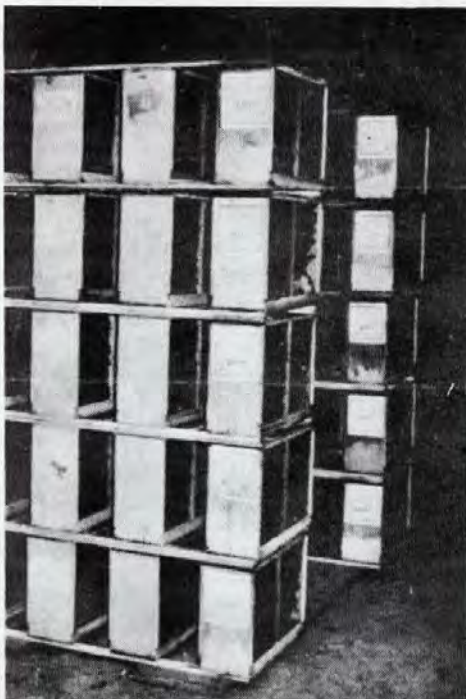
9 MIDNITES

7 ITALIANS

9

The Strains Preferred by Leading  
Honey Producers

Have you tried York's bees and service? Make 1979 your season to purchase your bees from a firm featuring both types of hybrid stock. New Starlines and Midnites continue to be the only privately developed strains of hybrids that consistently return more honey per colony. Be modern and use hybrid queens that produce vigorous workers which will extend your season and add to your total crop. Shipment made by parcel post, or your truck or station wagon. Information leaflets available on Starlines and Midnites; write us for your copy by return mail. Now booking for choice dates.



## Bees & Queens

For Hobbyist - Honey Producer - Pollinator

### ITALIANS

|                |         |         |         |         |
|----------------|---------|---------|---------|---------|
|                | 1-3     | 4-25    | 26-99   | 100 up  |
| 2-lb. pkg. w/q | \$17.00 | \$16.50 | \$16.25 | \$16.00 |
| 3-lb. pkg. w/q | 21.50   | 21.00   | 20.85   | 20.50   |
| 5-lb. pkg. w/q | 34.00   | 33.00   | 32.50   | 32.00   |
| QUEENS         | 5.75    | 5.55    | 5.45    | 5.35    |

### STARLINE OR MIDNITE

|                |         |         |         |         |
|----------------|---------|---------|---------|---------|
|                | 1-3     | 4-25    | 26-99   | 100 up  |
| 2-lb. pkg. w/q | \$17.40 | \$16.95 | \$16.65 | \$16.40 |
| 3-lb. pkg. w/q | 21.90   | 21.50   | 21.25   | 20.90   |
| 5-lb. pkg. w/q | 34.40   | 33.40   | 32.90   | 32.40   |
| QUEENS         | 6.15    | 5.95    | 5.85    | 5.75    |

Prices F.O.B. Jesup

Queenless packages — deduct \$2.00 per pkg.

Tested Queens—add \$1.00 per pkg. or queen.

Clipped and Marked 50¢ each.

Terms: Small orders cash, larger orders \$2.00 deposit per package and balance three weeks prior to shipping date.

WRITE FOR FREE COPY OF  
SHIPPING RATES AND INFORMATION

Shipments start first of April depending upon spring weather conditions.

| APRIL 1979 |    |    |    |    |    |    |
|------------|----|----|----|----|----|----|
| S          | M  | T  | W  | T  | F  | S  |
| 1          | 2  | 3  | 4  | 5  | 6  | 7  |
| 8          | 9  | 10 | 11 | 12 | 13 | 14 |
| 15         | 16 | 17 | 18 | 19 | 20 | 21 |
| 22         | 23 | 24 | 25 | 26 | 27 | 28 |
| 29         | 30 | 31 |    |    |    |    |

| MAY 1979 |    |    |    |    |    |    |
|----------|----|----|----|----|----|----|
| S        | M  | T  | W  | T  | F  | S  |
|          |    |    | 1  | 2  | 3  | 4  |
| 5        | 6  | 7  | 8  | 9  | 10 | 11 |
| 12       | 13 | 14 | 15 | 16 | 17 | 18 |
| 19       | 20 | 21 | 22 | 23 | 24 | 25 |
| 26       | 27 | 28 | 29 | 30 | 31 |    |

| JUNE 1979 |    |    |    |    |    |    |
|-----------|----|----|----|----|----|----|
| S         | M  | T  | W  | T  | F  | S  |
|           |    |    |    | 1  | 2  |    |
| 3         | 4  | 5  | 6  | 7  | 8  | 9  |
| 10        | 11 | 12 | 13 | 14 | 15 | 16 |
| 17        | 18 | 19 | 20 | 21 | 22 | 23 |
| 24        | 25 | 26 | 27 | 28 | 29 | 30 |

Help us to help you  
ORDER TODAY

PLAN NOW on your shipping dates for the coming spring. Present indications are that shipments will have to be planned now for more difficult delivery schedules by parcel post. Now booking orders.

Particularly plan to use hybrids for the coming season. Our rate of production of hybrids continues to rise as modern, commercial beekeepers learn of increased benefits to them. BEE WISE — HYBRIDIZE.

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POST OFFICE BOX 307  
(The Universal Apiaries)

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JESUP, GEORGIA 31545



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

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

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

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

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

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

**WANTED HONEY!** The Honey Man's Raw Honey. Forest Lake, Minn. 55025. Phone: 612-464-5420, 612-922-5234.

**HONEY WANTED**: All varieties, any quantity, also comb honey. Office 612-464-4633. Residence 612-464-7476 — 612-462-4774. Nature's Treat, 6764 W. Bdwy., Forest Lake, MN 55025.

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**WANTED**: Commercial outfit needs hired help for 1979 season. Golden Valley Apiaries, Route 2, Box 62, Fairmont, Nebraska 68354.

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**QUEENS: DADANT'S STARLINE** and **HYBRID ITALIAN**. Bees, nucs and bee supplies for sale. DIXIE HONEY CO., Rt. 1, Box 350, Shallotte, N.C. 28459. Phones: 919-579-6036 & 919-278-6951.

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**ITALIAN QUEENS AND PACKAGES** from April to end of season. Queens 1-5 \$5.00, 6-25 \$4.75, 26-100 \$4.50, over 500 \$4.25. 2 lb. packages w/q \$14.00 plus package. All packages picked up here. John Rickard, Rt. 1, Box 2241, Anderson, Ca. 96007. PH (916) 365-5551, 365-6556.

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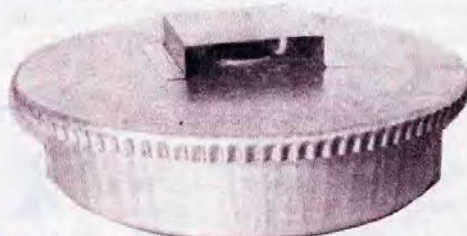
## THE WALTER T. KELLEY CO.

Clarkson, Kentucky 42726

## POLLEN SUBSTITUTE

Feed dry pollen substitute on the warm sun shiny days in our wax molding pans and watch the bee go wild and wallow in it. On threatening days cover the pans with these covers so that the bees can come and go as they see fit. Large flaired hole to prevent rain entering pan.

|           |                   |         |      |         |
|-----------|-------------------|---------|------|---------|
| Cat. #243 | Wax Pan Cover     | 7 Lbs.  | Each | \$ 5.00 |
| Cat. #246 | Wax Mold Pan      | 7 Lbs.  | Each | 1.95    |
|           | Bundle of 12 pans | 27 Lbs. |      | 18.50   |



**WARNING:** In feeding pollen substitute keep close track of the food storage or they may run out and starve.

|          |                           |                |
|----------|---------------------------|----------------|
| Cat. #72 | 5 lb. Mixed Substitute,   | Ship. wt.      |
| Cat. #73 | 25 lb. Mixed Substitute,  | 7 lbs. \$ 4.00 |
| Cat. #75 | 100 lb. Mixed Substitute, | 27 lbs. 15.00  |
|          |                           | 105 lbs. 50.00 |

**THE WALTER T. KELLEY CO.**  
CLARKSON, KY. 42726

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## The Revolutionary New



## Extractor



All the extractors have V shaped sloping bottoms with large center drains. The extractor tank and reel are made of heavy 16-gauge 304 quality stainless steel. Note the continuous weld and reinforced construction on reel and tank.



Note the easy to use controls. The top dial is the speed control; the bottom dial sets the acceleration time.

| Model Number     | 2401              | 4401              | 8001              |
|------------------|-------------------|-------------------|-------------------|
| Frame Capacity   | 24 D/44 Shal      | 44 D/60 Shal      | 80 Frames         |
| Voltage Required | 110 volts         | 110 volts         | 110 volts         |
| Motor Type       | 1/4 Hp.           | 1/2 Hp.           | 3/4 Hp.           |
| Drain Diameter   | 2" FPT            | 3" FPT            | 3" FPT            |
| Tank Height      | 34"               | 36"               | 38"               |
| Tank Diameter    | 30"               | 38"               | 55"               |
| Reel Diameter    | 28"               | 35"               | 52"               |
| Shaft Diameter   | 1 1/4"            | 1 1/4"            | 1 1/2"            |
| Brake Type       |                   | Electric Disc     | Electric Disc     |
| Warranty         | One Year Complete | One Year Complete | One Year Complete |
| Catalog Number   | HO 61050          | HO61070           | HO 61040          |
| Price            | \$1250 Net        | \$1945 Net        | \$2485 Net        |

REMEMBER — YOU GET WHAT YOU PAY FOR!!

## PACKAGE BEES

**\*Pick Up at Onsted Store Only!**

### 2 Pound Package

|                |             |
|----------------|-------------|
| 1-24 Packages  | \$22.50 ea. |
| 25-up Packages | 21.75 ea.   |

### 3 Pound Package

|                |             |
|----------------|-------------|
| 1-24 Packages  | \$28.00 ea. |
| 25-up Packages | 27.25 ea.   |

## QUEENS

|                    |            |
|--------------------|------------|
| 1-24 Queens        | \$7.25 ea. |
| 25-99 Queens       | 6.60 ea.   |
| 100-or more Queens | 6.10 ea.   |

Queens are sent post paid air mail.  
Telephone order in for early arrival.

\*Prices subject to change without notice.



**\*Package Bees Will be Available in Late April and Early May.**  
No Deposit Required. Telephone Order In for Early Arrival.

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|                                                      | 9 1/8"  | 6 1/4"  | 5 3/8"  |
|------------------------------------------------------|---------|---------|---------|
| 100 Hoffman Top Bar Std. Frames, Commercial          | \$38.00 | \$38.00 | \$38.00 |
| 1000 or more Hoffman Top Bar Std. Commercial Grade   | 275.00  | 275.00  | 275.00  |
| 5 9 5/8 Deep Bodies, 9 1/8 Frame, Commercial Grade   |         |         | 28.85   |
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| 100 9 5/8 Deep Bodies, 9 1/8 Frame, Commercial Grade |         |         | 375.00  |
| 5 5 1/2 Shallow Bodies, 5 3/8, Commercial Grade      |         |         | 22.00   |
| 50 5 1/2 Shallow Bodies, 5 3/8, Commercial Grade     |         |         | 200.00  |
| 100 5 1/2 Shallow Bodies, 5 3/8, Commercial Grade    |         |         | 375.00  |
| 5 6 3/8 Shallow Bodies, 6 1/4, Commercial Grade      |         |         | 22.00   |
| 50 6 3/8 Shallow Bodies, 6 1/4, Commercial Grade     |         |         | 200.00  |
| 100 6 3/8 Shallow Bodies, 6 1/4, Commercial Grade    |         |         | 375.00  |

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