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April, 1984

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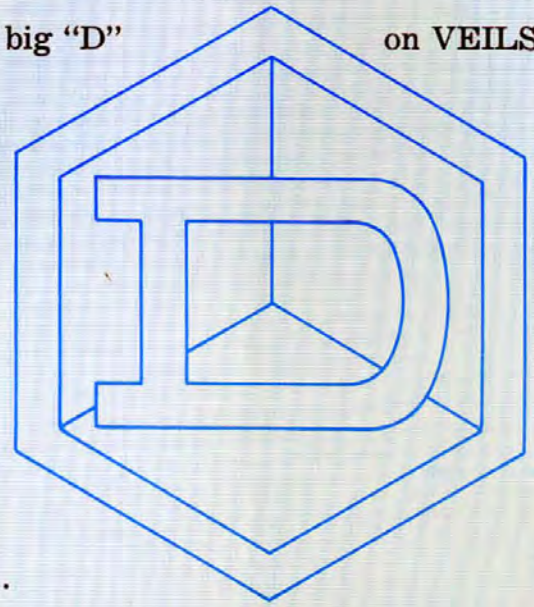

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John Root

Lawrence Goltz

Renee Harrison

Mark Bruner


Mark Bruner, Editor

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P.O. BOX 706
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John Root, Associate Editor
Lawrence Goltz, Western Editor
Dr. Roger A. Morse, Research Editor
Dr. Richard Taylor, Contributing Editor
Renee Harrison, Advertising Mgr.
Rebecca Dull, Sub. Mgr.

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# GLEANINGS IN BEE CULTURE


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# COVER STORY

APRIL IS A MONTH OF APPARENT SIMPLICITY, WHEN SUBTLE LIFE PULSES BEGAN TO BE HEARD AND THE OBSERVANT EYE BEGINS TO NOTICE SMALL THINGS UNFOLDING INTO LIFE WITH BOTH BEAUTY AND SURPRISING COMPLEXITY.

# NOTES FROM THE BEEYARD

by Mark Bruner

## THOUGHTS ON BEING CAUGHT BETWEEN THINGS

April is the "caught between" month for us folks in the northern states. By April we're fairly sure that winter is over, but aware enough of history not to bet on it. Never-the-less, the human mind, given a choice, usually opts for hopefulness and by April, most of us are assuming that spring probably, should be, almost for certain, might just gamble on it, by all appearances, is here. Maybe. For beekeepers, poets and other rascals of the woods and fields, the often touted new beginning does, indeed, begin anew. Optimism effervesces like a room full of energetic first graders, and carefully prepared plans, brewed during the dark seiges of winter, begin to unfold and present promises of the like necessary to make old folks feel young and young folks feel like old folks feeling young.

This spring, for me, is much more of a "caught between time" than usual. Not so much in terms of whether or not winter has really gone, but in that other opportunities, and even memories, have made themselves known in a way that they never have before. For instance: spring, for my family, has always been a time of cultivation, earthdirt, bulbs, seeds and bees. In addition to being a beekeeper my father, for many years, owned and operated a greenhouse. April, to the senses. was always a time of rich smelling soil, a certain warmth beneath the cold surface of things; the touch of small life forms, the dormancy or growth of which depended upon the next human action. The memories of those days returns every spring, but perhaps no more so than this one as my own son approaches the age at which he can actually begin helping in the beeyard. Last year he was a bit too young, though he rode along to the yards and, with a plastic hoe he assumed to be a suitable hammer, helped build equipment by battering at every piece of wood in sight. This year, like April, he is "caught between..."just barely old enough. And that's the time to begin, I guess. He understands enough to begin to learn that all things of life, no matter how different they are from him, are infused with beauty and value and magic.

After all, are we not, in fact, all creatures "caught between" complex truths our environments? We are all, continuously, in the beginning stages of learning what we need to know to survive and what we should know to be happy. I realize that some among our kind take it as a matter of fact that the human creature stands dominant over all other life forms -- that ours is the freedom to act according to our whims and humors. I feel much more "caught between." I can't accept that living is such a frivolous exercise in arrogance. Quite the contrary -- I weigh in my own mind the semantic game which poses this question: "Does nature depend on humans more than humans depend on the rest of nature's balance?" Consider it for the sake of doing so. What would be the consequences for this environment should humans vanish, as did dinosuars, from the face of the earth? Conversely, what is the probable consequence to humans, should even one, seemingly insignificant but truly vital link in the great balanced food chain be eliminated or detrimentally altered? The answer is as boldfaced and awesome as it is obvious. Clearly, the existence of each of us is intricately linked with a host of other living things. Such dependency cannot be taken lightly. Disregard of environment is something not to be risked by those of us "caught between."

It disturbs me, on the too frequent occasions, when I hear arguments to the effect that our natural environment can best be preserved by encouraging industrial development that, in turn, will provide wealth and the means by which we can afford to preserve that which is valuable to us. It disturbs me to hear declarations that without vast systems of weaponry, we would have no environment to protect or enjoy. That, to me, is convoluted logic. No one can deny the necessity of industrial expansion -- even vigorous expansion. No one can deny the necessity of defensive strength in a world where what is wanted or needed is so often procured through aggressive might. Still, there seems a greater wisdom represented by the person who shakes a package of new bees in April. hears their peculiar sound and senses, for some scarcely articulate reason, that the relationship of beekeeper to bee to plant to soil to food to sensory beauty, is such that one without the other, would have an existence much less complete if, indeed, such exclusive existence was possible at all. That is being "caught between." It is a good feeling. It is a secure feeling. But it is a feeling that demands respect. It is a circumstance that requires each and every one of us to accept that no other priority, social, economic or political, takes precedence over the responsibility of insuring that, before all other concerns, the dependency of humans upon nature is carefully preserved.

I think it is more than sentimentalism to entrust, to the future, a vision of my son, during the first days of a distant April, throwing off the doubts of winter to take his son into the beeyard, full of hope and respect for the things that make hope possible.

# Questions and Answers

**Q. Here in Indiana I find that supers never get filled after July. Applying the "Taylor Principle" I have refrained from giving the hives supers after July in hope that the bees would store the late honey in the brood chambers. But then these hives plague me with post-season swarms due to their crowded conditions. How do I manage hives to get heavy brood chambers for winter and at the same time prevent late swarming? Keith S. Delaplane, 2501 Soldiers Home Rd., West Lafayette, IN 47906.**

**A.** Fall swarming is, in my experience, not common, even from crowded colonies. Even so, such swarms present no real problems. They cannot build up sufficient to survive the winter, and so should be ignored. And the colonies will not, I believe, be found to have been weakened significantly by such swarming by the time spring comes. If heavy with stores in the fall, and not subjected to special stress during the winter, then they will be bursting with bees in the spring, whether they have swarmed the previous fall or not. **Richard Taylor**

**Q. I'm going to be away for about three months this summer. What should I do with my five colonies of bees? Would it be all right just to stack three or four extracting supers on each hive and leave them? Bill Ryding, Box 293 Sleepyhollow Rd., Kane, PA. 16735**

**A.** That depends on which three months you will be away. If you don't go until around the first of July, when swarming will be pretty much over, then yes, just super them up and harvest the honey when you get back. But if you are leaving before then, you should, in addition to supering them up, have some beekeeper at least keep an eye on the apiary to gather stray swarms.

Bees require virtually no attention between end of swarming season and harvest, unless you are running them for comb honey, in which case the supers need to be harvested as soon as they are filled. **Richard Taylor.**

**Q. I have ten hives from which I extract about 500 pounds of honey each year. I use a four-frame hand-cranked extractor, which is slow and tiresome. I want to buy a motor-driven extractor, but note that many of them have aluminum or iron braces and some have welding joints exposed. Is there a danger of contamination to honey by exposure to these? David Bixby, 22 Nathaniel Blvd., Delmar, NY 12054**

**A.** Honey does react with iron, and possibly with aluminum, but I think there is no danger of contamination if the exposure to these metals is brief, as when one is extracting. I would be concerned only if the honey were in contact with these metals for two or three weeks at a time. Even so, I believe there is no actual contamination, in any sense that would be significant for health. The main effect of contact with iron is darkening of the honey.

Stainless steel is without doubt the best material for honey house equipment or, in the case of small extractors, plastic. But it is expensive, and I doubt that the cost would be justifiifed for an apiary of ten colonies.

An alternative is to raise comb honey. **Richard Taylor**

**Q. I have read that you can store queens in their cages over an excluder in a queenright colony. How do you prevent the queen below from attacking these foreign queens? Also, should you leave the attendant workers with the queens in the cages?**

**A.**
Queens can be stored fairly safely over a strong colony. The inner cover should then be placed upside down over the queen cages and the excluder, and the outer cover placed over that, to keep the queen warm. The excluder protects the queens in their cages from the queen below, but permits the workers to feed and tend the new queens. There is no need to remove the attendant workers. Queens should not be stored that way during cold weather, however, for if the bees retreat to the brood nest below, to keep it warm, the stored queens are abandoned and may perish. It is, incidentally, safer to store queens in a queenless nuc or over a queenless colony. I once lost my stored queens using the method here described, but I have never lost them when stored in a queenless nuc. **Richard Taylor.**

## NEWS NOTES

### Ohio

The Ohio State Beekeeper's Association spring meeting will be held at Capital University, Columbus, Ohio, on Saturday, April 14 from 8:30 a.m. to 3:00 p.m. the meeting will be in the "Bridge of Learning" auditorium.

Among the speakers will be John Barlow, and James Tew. Lunch will be served at noon in the college cafeteria. For details, contact James Thompson, 8227 Eby Road, Smithville, Ohio 44677.

### Ontario Fanshawe College London Course in Beekeeping

This is a very practical course for people who keep bees and want to improve their methods as well as for the novice who wants to learn the habits of bees along with practicable methods of producing honey efficiently. Pollination of vegetables, fruits and forage crops will be studied also. The instructor again this year is Harold Killins, B.SA. He is thoroughly experienced in beekeeping. There will be ten 2-hours sessions with six in the apiary. Course starts April 9th. Apply to Mr. Dan Link, Fanshaw College, Continuing Education, 520 — 1st Street Bay 20, London, Ontario. Phone (519) 452-4425.


# The Monthly Honey Report

**March 10, 1984**

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

**Wholesale Extracted** — **Reporting Regions**

| Sales of extracted, unprocessed honey to Packers, F.O.B. Producer. Containers Exchanged | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 60 lbs. (per can) White | 39.00 | 46.33 | | | 37.00 | 39.20 | 36.00 | 35.80 | 37.80 |
| 60 lbs. (per can) Amber | 39.00 | 41.00 | | | 33.50 | 33.75 | 32.20 | 33.70 | 34.80 |
| 55 gal. drum (per lb.) White | | .54 | | .58 | .56 | | .55 | .57 | .58 |
| 55 gal. drum (per lb.) Amber | | .47 | | | .53 | | .47 | .54 | .54 |
| Case lots — Wholesale | | | | | | | | | |
| 1 lb. jar (case of 24) | 30.50 | 25.05 | | 25.92 | 38.40 | 24.00 | 25.00 | 25.00 | 28.08 |
| 2 lb. jar (case of 12) | 31.00 | 23.65 | | 23.76 | 34.80 | 23.00 | 25.25 | 25.15 | 26.00 |
| 5 lb. jar (case of 6) | 32.00 | 28.50 | | 23.04 | 29.20 | 26.75 | 28.50 | 23.70 | 27.45 |
| Retail Honey Prices | | | | | | | | | |
| ½ lb. | 1.00 | .96 | | .85 | .90 | .90 | .88 | .90 | .90 |
| 12 oz. Squeeze Bottle | 1.50 | 1.22 | 1.42 | 1.22 | 1.75 | 1.35 | 1.35 | 1.40 | 1.25 |
| 1 lb. | 1.62 | 1.46 | 1.69 | 1.47 | 1.85 | 1.47 | 1.39 | 1.62 | 1.50 |
| 2 lb. | 2.70 | 2.59 | 2.99 | 2.69 | 3.55 | 2.49 | 2.97 | 2.72 | 2.60 |
| 2½ lb. | 3.75 | | | | | | | | |
| | | 4.30 | | 3.27 | 3.49 | 3.25 | | 3.20 | |
| 3 lb. | 4.00 | 4.02 | 3.88 | 3.87 | 4.98 | 3.85 | 4.25 | 4.32 | 3.50 |
| 4 lb. | 5.00 | 4.92 | | 5.03 | 4.89 | 4.90 | 4.75 | 4.89 | |
| 5 lb. | 6.50 | 6.00 | | 5.90 | 5.79 | 5.77 | 5.50 | 5.89 | 5.50 |
| 1 lb. Creamed | | 1.75 | | | 1.55 | | 1.55 | 1.49 | 1.50 |
| 1 lb. Comb | 2.25 | 2.25 | | 1.69 | 1.95 | 1.85 | 1.85 | 2.09 | 2.05 |
| Round Plastic Comb | 1.75 | 1.75 | | | 1.79 | | 1.75 | 1.69 | 1.65 |
| Beeswax (Light) | 1.25 | 1.17 | | | 1.25 | 1.50 | 25 | 1.00 | 1.15 |
| Beeswax (Dark) | 1.25 | .1.05 | | | 1.15 | 1.40 | .90 | 1.50 | 1.00 |
| Pollination Fee (Ave. Per Colony) | 21.50 | 21.25 | | 18.00 | 20.00 | | 22.00 | 18.00 | 25.00 |

## MISCELLANEOUS

### REGION ONE

Honey sales remain slow. Warm weather in February gave bees much needed flight days. Some losses have been reported as early as February 10. Pollen shortages in many hives. This should be watched. Also, some feeding will be needed in about half of the hives that were in good shape in November. About 30 percent loss expected.

### REGION TWO

Unseasonably warm weather in February brought heavy brood rearing. Bees have had good cleansing flights and seem in generally good condition. Honey sales fair -- off from a year ago, but up from last fall. New York sales soft except for those who promote. If warm weather continues it may be another big swarm season. Feeding some colonies.


### REGION THREE

Bees have wintered well in Illinois even though winter was severe. February cleansing flights.

### REGION FOUR

In North Dakota a good covering of snow would help exposed crops and reduce winter kills. Bees have had numerous cleansing flights to date. There does not seem to be a heavy winter loss. Honey sales are fair in Minnesota and not much harm from foreign retail packs in evidence. Missouri honey sales reported slow at this time.

### REGION FIVE

Warm weather in February allowed for feeding and cleansing flights. Honey market slow to weak in North Carolina. Almost all local honeys sold in small lots below value. Equipment sales slow due to uncertainty about future. Gypsy moth infestation in Western N.C. will cause spraying in National Forests this spring. So far, good spring build-up.

### REGION SIX

Last week of February warm and bees stored quite a bit of pollen. Early build-up can be expected and swarming will be a problem. Little feeding needs expected. Honey sales good and prices unchanged from last month. Kentucky maples blooming mid-month and bees have packed combs.

CONTINUED ON NEXT PAGE

## HONEY REPORT (Continued)

### REGION SEVEN

Bees in good condition but may need some feeding. Moisture conditions good but could use rain to fill ponds. Honey sales slow in Oklahoma. Some pollen coming in on warm days. Elms and willows. Attendance at bee meetings down. Spring fever not yet here. Arkansas reports sales of honey down due, at least in part, to government distribution of honey in welfare food programs. Good over-wintering. Sales of beekeeping equipment reported down because of poor 1983 honey crop. Texas reports honey supplies down locally because of producers turning all their honey in to the government.

### REGION EIGHT

Honey sales normal. Prices stable, supply adequate. Good cleansing flights, small patches of brood. Some feeding. Some shortages of honey in grocery and health food stores. Interest in honey recipes from newspapers. Little February moisture.

### REGION NINE

Eucalyptus flow heavy. Most trees in bloom. Washington losses between 5 and 10 percent. Stores being used fast. Honey sales remain good. Most of 1983 crop sold. Almond peak bloom occurred around Feb. 25 in California. Plenty of moisture. Foul brood rearing its ugly head in some operations. Pollination prices up two to three dollars. Some growers had difficulty getting bees for almonds.



# Testing Your Beekeeping Knowledge


By CLARENCE H. COLLISON
Extension Entomologist
The Pennsylvania State University
University Park, PA 16802


**The first 7 questions are true and false. Place a T in front of the statement if entirely true and a F if any part of the statement is incorrect. (Each question is worth 1 point).**

1. _____ All pesticides are equally dangerous to honey bees.
2. _____ Wax moth larvae feed on, digest and assimilate some of the wax of a brood comb.
3. _____ Varroa disease is caused by a mite that lives and develops in the tracheal system of adult worker bees.
4. _____ Field bees are most often killed by pesticide applications.
5. _____ The presence of ants in a honey bee colony may be an indication of a weak colony or a colony having problems.
6. _____ Brood infected with American foulbrood die during the last two days of the larval period or the first two days of the pupal period.
7. _____ Wax moths are a continuous threat except when temperature drops below 40°F.

**Multiple Choice Questions (1 point each)**

8. _____ Healthy honey bee larvae are: A) yellowish brown; B) white with a dark head; C) pearly white; D) mottled white and yellowish-brown; E) grayish black.
9. _____ Piles of dead adult bees with a full complement of hair found in front of a hive may signify: A) starvation; B) pesticide poisoning; C) a poor queen; d) American foulbrood; E) Nosema disease.

**Please match the following honey bee diseases and pests with the appropriate symptoms and damage characteristics. (1 point for each correct answer).**

A. American foulbrood
B. Bee lice
C. Ants
D. Sacbrood
E. Paralysis
F. Nosema
G. Bears
H. Chalkbrood
I. Mice
J. Skunks
K. Acarine Mites
L. Wax Moths

10. _____ Colony is knocked over, brood frames are scattered about the apiary and a few combs are almost fully eaten.
11. _____ Examination of brood combs show a series of tunnels lined with silken webs going through the cell walls.
12. _____ The front of the hive is scratched up and muddy and there are small piles of chewed up bee parts on the ground in front of the hive.
13. _____ In the lower corner of the brood chamber you find three adjacent combs with a hole chewed into them about the size of an apple, along with a lot of grass, leaves, and debris.
14. _____ Upon examining an area of capped honey on a brood comb, you see a series of tiny white tunnels going from cell to cell, just below the capping surface.
15. _____ Adult bees are unable to fly and trembling uncontrollably at the hive entrance. Their hairless bodies have a dark, shiny or greasy appearance.

**16. List five precautions beekeepers should take to prevent their bees from becoming a neighborhood nuisance. (Question is worth 5 points).**

ANSWERS ON PAGE 196

# Research Review

By DR. ROGER A. MORSE
Department of Entomology
Comstock Hall
Cornell University
Ithaca, NY 14853

## Crabapples As Apple Pollinizers

Most apple varieties require pollen from another variety to set fruit. Even the few that can self-pollinate appear to benefit from cross-pollination. Flowers of the new triploid varieties such as Mutsu and Jonagold produce no pollen and must have pollen from other varieties. Bees, of course, accomplish most of the pollen transfer, and are an important part of good orchard management.

In the past apple growers have interplanted varieties to insure having a crop. However, interplanting or grafting in different varieties causes many problems. For one thing, special picking crews must be employed or given extra supervision to make certain the varieties are not mixed during the harvest. For another, the different varieties require different schedules of pruning, fertilizing and treatment of insect and disease problems. As in the case with most crops, management is easier and more efficient if blocks of only one variety are grown.

Studies on the use of crabapples as pollinizers were apparently started in 1962 in England when growers were having trouble getting good fruit set on a very early-blooming variety for which they could not find another equally early pollinizer. The results were so encouraging that more extensive observations were made in England and initiated in the U.S. in the early 1970's. The chief advanatge in using crabapples is that they are not harvested. There is not concern about the quality of the fruit, and most of the care and treatment needed by other apples can be avoided. Several American growers are now using crabapples experimentally but there are too many questions for firm recommendations to be made.

According to the paper cited below, one problem with using crabapples is their sensitivity to viruses. For this reason the crabapples that are used are grown on their own rootstick and not grafted onto producing trees. The author says "ornamental pollinizers may be severely stunted, or they may collapse when the virus infects the new graft."

At present the preferred way to use crabapples is to grow a tree that is as skinny as a beanpole and as tall as the neighboring apple trees for which it is producing pollen. This means that flowers are usually found only in a big bouquet at the top of the plant. In this way the crabapple trees take no extra space in the orchard, yet the flowers are in the path of honey bees moving from one plant to another.

A major question is what color crabapple blossoms are best. Apple flowers are white and we know that honey bees use flower color as well as odor and shape, to orient as they move from one flower to another. Once a foraging bee finds a good source of nectar and/or pollen she stays with flowers of that source. Research data show that only about seven percent of pollen loads taken from bees returning to a hive contain poollen from more than one flower species; honeybees show remarkable flower constancy. It seems a good bet that crabapple flowers that most resemble apple blossoms will work best as pollinizers.

It is also clear that not all crabapples are equally good as pollinizers. And, no doubt each apple variety will have a crabapple variety that is best for it in this regard. This has been found to be true of other plants that require cross-pollination to set fruit or seed. Several crabapple varieties have been eliminated because they were poor pollinizers but much more testing must be done.

The information we have at present indicated we can expect to hear more about this subject. In fact one nurseryman quoted in the papers below says it will be "the wave of the future" in apple growing.

### References

**Vignos, P. Ornamental Crabapples: The pollinization alternative. American Fruit Grower 103(11): 36,44; 12(12)9-10. 1983.**

## Undertaker Bees

It is well known that as a honey bee worker ages she will "graduate" form one set of tasks to another set repeatedly. However, the extent to which individual bees specialize on a single task has become clearer through a recent study of those bees that remove the dead from a hive. It was observed that bees marked with paint while removing a corpse from the hive were very likely to be seen again doing the same thing, and the group of bees which performed this undertaking for the colony was quite small, comprising only one or two percent of the colony.

Dead bees are usually removed from the hive in less than an hour after they die (often much less), whereas pieces of wood or paper introduced into the colony are carried out much more slowly. Apparently chemicals resulting from decay of the dead bees allow the undertakers to distinguish the living from the dead very soon after death. These chemical signals can be removed by covering the corpses with paraffin, or extracting them in solvents, and dead bees thus treated are removed slowly.

Within a colony of bees, the rapid removal of the dead is probably critical to prevent transmission of diseases in these crowded conditions. The many aspects of nest hygiene in honey bees have evolved as a response to the problems arising in living in a society.

### References

**Visscher, P.K., The honey bee way of death: necrophoric behaviour in** *Apis mellifera* colonies. Animal Behaviour 31:1070-1076. 1983.

## 1984 Gypsy Moth Program Poses Problems

In mid-January I received a Draft Environmental Impact Statement on the Gypsy Moth Suppression and Eradication Projects prepared by the USDA's Forest Service and Animal and Plant Health Inspection Service. This is for the upcoming season. In my view it is a carelessly prepared document. Presumably it will be revised and improved but when one stops and thinks about all that is known about pesticides and honeybees it is difficult to understand how the authors of this docu-

CONTINUED ON NEXT PAGE

ment could be so naive.

The gypsy moth is now widespread in the United States and we can expect much spraying this spring to supress populations. Those who have suffered through an infestation on their property, or have seen it on that of others, are well aware that this insect is a real pest. However, some of the chemicals used to control this pest are also highly toxic to bees. Unless greater concern is shown by these government agencies in protecting honeybees and other pollinating insects, we can expect bee losses to be serious this year, as they have been in the past. There are insecticides that will control the gypsy moth yet are nontoxic or relatively so to honeybees; unfortunately the impact statement in its present form fails to make that clear.

My advice to those beekeepers who suffer losses as a result of pesticides is to document them carefully. Call in witnesses, especially county agricultural agents and farm advisors. Complain long and hard to which ever agency in your state is in charge of pesticide misuse (usually the Department of Conservation or Department of Agriculture). I am convinced that most honeybee-pesticide losses can be avoided if the proper material is used under the right circumstances. However, if beekeepers say nothing about their losses then no changes will be made.

## Honeybee Life Span

Why do winter bees live longer than those reared in the summer? The amount of time a bee spends in the hive and in the field appears to be hormonally controlled. When a bee becomes a field bee, she has the ability to use a certain amount of food (sugar) in her lifetime. When this capability is used up she dies. The average bee in the group studied (Carniolan Bees) had the ability to fly about 800 kilometers (480 miles) in their whole lives.

Aging in animals has been little studied. Because of their short life span honeybees make excellent experimental animals. In the next few years I expect we will be reading much more about the biochemistry of aging in both bees and man. Since aging (in all animals) is chemically controlled it is obvious we can someday control the process and thereby extend our own lifespans. Honeybees may play an important role in our learning about the process.□

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# Low Cost Assistance For Small Business

**Bu JOAN MANES OLSTROM 3164 Maple Court Reedsport, Oregon 97467**

Beekeeping can turn from a hobby into a small business—sometimes before you're ready or aware it's happened! The U.S. government estimates that 60% of all jobs are provided by small businesses which employ up to 20 persons. (That probably makes most of us beekeepers mini-businesses!)

The December 25, 1983 *Parade Magazine* reported that nine of ten of these small businesses fail within the first year! To help stem this high rate of business failures, various government and college programs are being set-up or made more accessible.

The Rural Small Business Assistance Center, in cooperation with some of the community colleges in Oregon and/or SCORE (Service Corp of Retired Executives) offers low or no cost evening workshops and various (higher priced) seminars.

The Lane Community College, Siuslaw Center in Florence has had 2½ hour "overview" sessions on accounting, being your own business consultant, trends in arts and crafts, and even estate planning.

Both Southwestern Oregon Community College (Coos Bay) and Lane Community College (Eugene, Florence) offer year-round small business assistance classes which offer individualized instruction tailored to your business coupled with generalized group instruction. Cost is $125/year. Workshops are often unlimited in attendance; the year-round class is limited to 12-15 students and is a three year program.

I've been attending various workshops at Florence. Class members include a dry cleaner, interior decorator, health food store manager, furniture dealer, crafts persons, and me—the beekeeper. We trade helpful ideas, hear a variety of speakers, and offer group encouragement. Often new contacts are made which can be helpful in "networking," and getting new places to retail your product. Being on a Eugene TV program about women in small business was a spin-off benefit to me.

Look in your area for similar classes. I am sure that Oregon isn't the only state to have such community college/RSBA resources. Even if you have to take a 25 mile drive like I do, you will often find it worth your while.

The Small Business Administration (P.O. Box 15434, Ft. Worth, Texas 76001) offers many free or low cost pamphlets designed to assist the fledging or established business and is only a postage stamp away.

Your local library probably has a section of books covering everything from bookeeping and advertising to how to make money with your profits. Magazines devoted to small and bigger businesses are available for borrowing or by subscription.

SCORE is an organization of successful retired business persons in each state who will assist new business owners or established ones with problems. You may find their ad in the personals or business opportunities in your local newspaper's classified ad section.

Successful business persons—bee and non-bee—have given me some helpful ideas and sometimes I, in turn, have been able to help them.

Beekeeping helps and guidance are offered in our trade magazines, association and newsletters and conferences. Business assistance in setting-up and/or running our business (bees—honey—pollination) may help us to define and reach our goals more successsfully. Planning and managing are necessary for the very small business as well as the BIG business. Running a bee business is more than just making LOTS OF HONEY, although that is a very important part!

Check our your community business assistance resources. I am learning a lot. You can too. And in no time at all—we'll have such successful businesses that there will be a honey shortage!□

# Beekeeping Technology

By DR. JAMES TEW
The Agricultural Technical Institute
Wooster, Ohio 44691

# For The Beginning Beekeeper

The sequence of events that culminate in an individual becoming a beekeeper seem impossible to generalize. How many times have we heard stories of a swarm hanging from a tree when someone arrives home from work. Not knowing what else to do, the reluctant new beekeeper puts the bees in "something". No one can predict what that "something" will be. Anything from dresser drawers, nail kegs, corrugated boxes, even an old tool box have been used. The point is that an individual who has no intentions of getting into the business is suddenly a beekeeper. Even though the personality profile of a new beekeeper would be interesting to discuss, I'm going to avoid that for now. I want to discuss some problems or situations a new beekeeper (in this instance 1-2 years experience) can expect to face.

### Situation #1 — Tree Bees

Once the word gets out that you're a beekeeper, expect to have someone give you some free bees. They're usually in the wall of their house and probably somewhere around the second floor window. The house cannot be damaged and the home owner expected to be given half of the three or four hundred pounds of honey that is surely stored in the wall. I clearly recall one of my first instances along this line. A local farmer friend told me an old house on his property had a hive of bees in one of the walls. They were mine for the taking. My plan was simple. Destroy the wall, find the queen and cage her. After placing the caged queen in my new hive which had been previously positioned near the demolished wall, great numbers of bees would simply fill my new hive as I stood by watching. Things didn't go exactly as planned. When I attempted to destroy the wall, bees came out in great numbers and destroyed me. This rather embarrasing occurance was compounded by the fact that I had two non-beekeeping friends observing from a nearby car. They were truly impressed.

I recall crawling to the car to explain that multiple stings were common and no cause for concern. I explained that we had done all we could that day and the project would have to be finished on a later day. As per my farmer friends plan, the house was razed — bees and all. Free bees are rarely free.

### Situation #2 — Multiple Stings (More than 5)

Stings are the bane of the beginning beekeeper. The first instance of multiple stings can be a sobering occasion for a new beekeeper as it was for me in situation #1 above. After all the work that has gone into the new hobby — the reading, the hive construction, the package arrival, the ridicule from non-beekeeping friends, what happens? We get stung repeatedly by our ungrateful charges. When the elements of pain, shock, anger and embarrasment gel, it puts a damper on the new developing hobby. Forget those feelings. Go do something else for a couple of days. The enthusiasm will return if the new beekeeper is true beekeeper material.

Even though I have passed through all the emotions above (pain, shock, anger and embarrasment) I want to add one more emotion to my personal list of my first multiple sting experience — fear. I can recall having what seemed to be hundreds of thousands of bees (most of which seemed to be inside my veil) stinging every part of me. I did the only sensible thing a beekeeper could do — I ran (for miles). I gave that hive a few days to consider how ungrateful they had been to their new master before I returned to close the hive. I don't think a beekeeper will ever enjoy stings. They do become more routine as time passes.

### Situtation #3 — Bee Fever

There is a condition that occasionally manifests itself in a new beekeeper called "Bee Fever". This condition may subside after a few months. However, in some cases, it may last for years. In my beekeeping opinion, the fever is nothing of which a person should be ashamed. The symptoms of the fever are obvious. The affected person is unable to think, talk, or write about anything but bees. Every purchase made must have either a direct or indirect use in beekeeping. Instead of counting sheep in order to doze off, a beekeeper with the fever will work his hives mentally until sleep overtakes him. Even though this condition may appear odd to non-beekeepers, it's a fairly normal condition that most beekeepers go through at some time.

### Situation #4 — Losing Your Friends

This situation is actually a combination of situations 2 and 3. People who knew the beekeeper before he undertook the apiculture hobby may be strained to understand why someone can eat and sleep beekeeping not to mention the pain of stings. Most people will humor the new beekeeper and assume that it will pass. At the same time the beekeeper will make new acquaintances at bee meetings so all is not lost. In reality Situation #4 is offered "tongue in cheek".

I don't know of a case where a beekeeper actually lost his frineds. However, it probably wouldn't hurt to limit bee conversations in non-beekeeping gatherings. Even if the topic is brought up, it will probably wear a bit thin after a while. Of course this depends on the occasion and the group. Don't pass up a chance to develop a new beekeeper on these occasions if possible.

My intentions were not to discuss all the possible situations, nor the most important, but rather ones that I know have occured. I'm sure each beekeeper has had unique problems that have arisen occasionally. All these situations (sometimes problems) culminate in making beekeeping a challenging and unique hobby for all beekeepers.□

# BEEKEEPING FOLK ARTS

## Honey & Hive Products For Cooking & Other Home Uses

by Amos Arbee

Recently, during a friendly discussion, the topic came about as to whom or what one could blame for our present economic situation. Of course, it is way too much to cover in its entirety, but just to touch upon some of the outstanding highlights of this conversation will be my aim. First off, the father of the man I was talking with had been retired because of company cutbacks. "Oh well," came his earliest comment that his father, along with many others of us, expect entirely too much money and benefits from the company, hence his father might still be employed had his expectations been less. Hardly before the next question could be asked, he was quick to point out that his education would soon be completed and not wanting to sound selfish, his goal was to become wealthy as soon in life as possible by proving to his potential employer that his ability was exceptional. In conclusion, perhaps the cliche best suited for here might read, "Leave my barn stand and tear down my neighbor's if necessary."

With honey in our cooking and baking recipes we need never be concerned insofar as retiring it. It never cuts back, instead it always acts as an asset to the dish planned. You are sure to be delighted with honey's results.

**"Honey Spice Drop Cookies"**

**3 cups flour**
**1 tbsp. baking powder**
**1 tsp. cinnamon**
**½ tsp. cloves**
**1 cup shortening**
**1 cup honey**
**2 eggs, beaten**
**½ cup milk**
**½ cup molasses**
**¾ cup seedless raisins**

**Sift together flour, baking powder, cinnamon & cloves. Cream shortening & honey until very light and fluffy, add beaten eggs. Mix well, combine & add milk & molasses. Stir in raisins & dry ingredients, mix well. Drop by teaspoon on greased cookie sheet, bake at 375ºF about 10 to 12 minutes.**

**"Honey Fritters"**

**3 eggs**
**1 tbsp. butter**
**½ tbsp. sugar**
**½ tsp. vanilla**
**2 cups flour**
**½ tsp. baking powder**
**8 ozs. mild flavored honey**
**corn oil or shortening**

**In a large bowl, beat eggs well. Add and mix in butter, sugar, and vanilla. In a small bowl, combine flour and baking powder. Add gradually to egg mixutre. Knead until smooth on a light floured board. Cover.**

**Let stand for about ½ hour. Taking small amounts of dough, roll under palm of hand until rope-like in shape. Then cut into ½ inch pieces. Dip in flour.**

**Meanwhile, in your deep fryer with wire basket, heat oil on low heat. Gradually and gently add handful of pieces with flour. Turn them constantly until golden brown on all sides, being careful not to brown too much. Drain pieces on paper towels. Warm honey in a deep pan over low heat. Add fries. Stir constantly with a wooden spoon until fries hold honey. (usually 3-4 minutes).**

**Transfer to doilied platters. May be spinkled with confectioners sugar or cinnamon sugar. A delicious treat anytime!**

**"Honey Fries"**

**1½ cups flour**
**1½ tsps. baking powder**
**½ tsp. salt**
**½ cup shortening**
**⅔ cup honey**
**2 eggs, beaten**
**¾ cups chopped pecans**
**½ cup milk**

**Sift together flour, baking powder & salt; cream shortening & honey until light & fluffy. Add eggs; mix well. Add dry ingredients & nuts alternately with milk; mix well after each addition. Put into greased 11 x 7 x 1½ inch pan; bake at 400ºF about 20 to 25 mintues. Cool.**

**Cut into strips about 3 x 1 inches. Delicious!**

### Bear Damage Faced By The Beekeeper

It has been quite well established that the black bear does not like to climb on pipes. With this particular thought in mind it might well be logical to consider the following suggestion for whatever merits it may have to offer. Design and erect a scaffold type platform (to place bees on) using mainly galvanized pipe and controlled via pump jacks (or facsimile) at either end. When bees are taken to the selected site they could be elevated to height desired by the beekeeper. Then the beekeeper, upon his visits to the beeyard to check his bees, could lower them for adding supers etc. In the meantime this would help deter possible damage by the bear and also by the skunk.

# A GLEANINGS PROFILE

## Intermountain Honey — Beekeeper Owned and Operated

By LARRY GOLTZ, Western Editor
1230 Canby Rd. #122
Redding, CA 96003

Russel Nauta of Intermountain Honey, Ltd. in Redding, California is a man who sincerely believes that honey retailing has a future for himself and for the industry.

Just over three years ago Russ operated a travel agency in Redding but switched to beekeeping and recently opened a retail honey store which specializes in California honeys, each neatly packed bearing the Intermountain label. In addition to the standard glass jars of various sizes, he also retails in the plastic bears and the larger plastic containers of honey. Each is labeled with the type of honey they contain; everything from alfalfa to sage, also orange, star thistle and various wildflower types.

"I want people to buy honey which appeals to them, and be able to identify the honey which they favor, not to just ask for honey," says Russ.

Nauta, a service veteran, operates several hundred colonies of bees, assisted by queen and package producer Bruce Spade. Beside producing and packing his own honey, mostly thistle, orange and manzanita, he also takes bees to the almonds to pollinate. In late April the bees are moved to Washington State, in the Omak area, to pollinate apples, cherries and pears. He operates for honey from Shasta County to as far south as Bakersfield, in southcentral California. Beside his own honey he purchases additional honey from other California beekeepers in drums and 60 pound cans, processing it in his newly-set-up, food processing approved packing room. Everything was spic and span and shiny new equipment reflected pride and plans for possible expansion in the future.

"We are expanding rapidly," said Russ, who has a degree from Chico State University. He continues to take classes at Shasta College.

Russ, married with two children, is an articulate man who has some firm ideas about the beekeeping industry, honey promotion and retailing.

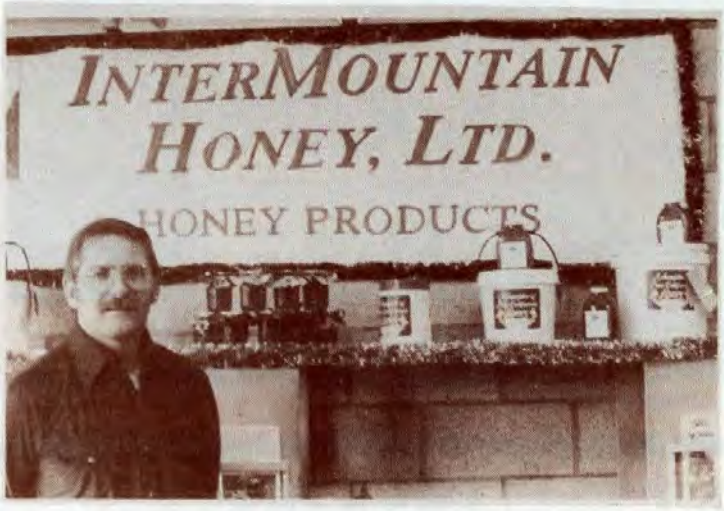
"We are projecting sales of about 185,00 pounds of honey in 1984," said Russ.

In his newly opened store he has the honey displayed in well lighted shelves where customers can select among the attractively labeled honeys. In addition to the extracted honey, there is also on display round plastic comb, to which he plans to add cut comb and chunk honey packs.

Two one pound jars of extracted honey in wooden display cases are prominently displayed. "I buy the wood display and carrying units from Lee White of Blossom Distributors in Eugene, Oregon," Russ told me. They are well made and seem to be very popular as gift packs.

I asked Russ about the seasonability of honey retailing. "The fall of the year seems to be the best," said Russ, who also markets honey in 60 pound containers and in case lots to grocers, health food stores and in bulk form to customers at the store. Two stainless steel honey dispensing tanks are mounted on a table conveniently near the counter for measuring out honey to customers who bring their own containers. I noted that a heating device keeps the honey flowing freely. Customers are pleased with the savings from purchasing honey in this manner. One tank is labled sage, and another orange, in keeping with the owner's philosophy that honey should be sold on the basis of a particular flavor, in contrast to "just plain honey". While talking to Russ I overheard a lady customer promise to return later with her own container after being told about the various honeys available. "I have run ads to simply promote honey, recipes, for example, but keeping the promotion of my own brand to the bottom line," said Russ.

Intermountain Honey, located on Westside Road #5, Meredith Center, Redding, California is just off busy Highway 273 (old Rt. 99) on the way to Anderson. It is becoming known as the Honey Room. An attractively designed sign at the driveway entrance announced the location during the grand opening of the store in early February. Next door, in an annex, Bruce Spade worked on renovating and painting hives, getting ready for the season already beginning with almond pollination.




**Russell Nauta of INTERMOUNTAIN HONEY, LTD., Redding, CA**

How did you get into the bee business," I asked Russ.

"I was born and raised in Michigan," he said, "up along the east shore of Lake Michigan. I remember the ships loading produce, mostly apples, for shipment to Chicago. While in Texas I met a lady from Red Bluff, California, came to visit her in California, and we were married. I came to California about 17 years ago. About 10 years ago I went back to Michigan on a visit, intending to stay a couple of weeks. I returned to California after three days. I just seemed to be out of step with everyone back there," he related with a laugh.

A business associate, who was a

CONTINUED ON NEXT PAGE

beekeeper introduced Russ to bees and beekeeping, and the introduction became a vocation.

Intermountain Honey is also a beekeeping supply store for a nationally distributed line of bee supplies, including extractors and honey processing equipment.

Redding, the home of Intermountain Honey, is located in Shasta County, the leading queen and package bee producing county in California. Such extensive producers as the Parks family, Tolletts, Rives, Cliff Thomas and others operate here. They supply Shasta County queens to honey producers throughout North America during March, April and May.

Pollinating almonds is also part of the business of beekeepers of Shasta County. Bees are then moved to alfalfa seed growing fields and other field crops as the seasons advance. Others are moved to the vegetable and fruit crops in the San Joaquin and Sacremento Valleys, or to the crops in Oregon and Washington. Northern California is not an outstanding honey producing region. To produce honey bees must be taken to the east of the Sierra Nevada Mountains, to the north, or south to the organge groves and field crops in the lower valley.

Asked about the national marketing plans for honey, Russ declined to comment, having not learned of the details. He does feel that such plans could be successful for other agricultural commodities and would be interested in knowing more about the promotion plans for honey before forming an opinion. He feels that promotion is very important in selling honey, having participated in several shows which promoted local honeys. He plans to exhibit at the State Fair in Sacramento this fall.

Does he plan a mail order business? Maybe for the future but not at present.

He had the following to say about his experience with commercial beekeeping: "You have got to stay on your toes and accept the risks, such as poor weather conditions."


**This sign directs customers from the highway to the Honey Room**

Does he feel that imported honey is hurting the retail sales of honey in his area? We were talking about honey imported from Latin American countries and others, such as China. "Yes, it does, in my opinion. There is obviously a market reaction when surpluses of honey are given away by the U.S.D.A."

This brought up the subject of the Commodity Corporation Loan Program and the accumulation of honey stocks held by the government. "I am afraid of the C.C.C. honey program," Russ said, "as it appears to be leading us into a self-fulfilling prophecy. I have bought honey from beekeepers who had consigned honey to the loan program, honey I was unable to purchase from the C.C.C., being advised that they intended to give the honey away."

Talking to Russel Nauta gives one confidence that the problem of marketing our honey is really an opportunity for beekeepers; a real challenge, yet a rewarding effort that can benefit not only the individual but the industry as a whole. The effort is not without risks as Russ would be the first to admit, but he is a beekeeper who has confidence that the solution to improvement of honey marketing lies largely with the individual rather than government assistance, or other costly promotion. He is, however, ready to listen to promotion ideas which he realizes may be necessary to help the sales of honey on a nation wide basis among people he cannot reach as an individual.□

# OBITUARIES

## ARTHUR COLVIN

Arthur LeRoy Colvin, 83, of Morriss, NY, died Saturday, December 17th. He was a beekeeper and formerly employed as an apiary inspector supervisor for the New York State Dept. of Agriculture, retiring in 1969. Thereafter he continued to produce honey which was shipped nationwide. He is survived by his wife, Corinne.

## NORMAN SHARP

Norman Sharp died February 1, 1984 of cancer. One of fewer than 50 fulltime beekeepers in New York, and one of the largest beekeepers in the state, he rented out his hives to fruit farmers in the region. He also sold 40-50 tons of honey annually. Besides fruit crops, his bees pollinated local onion crops for seed and, additionally, clover and crown vetch. Mr. Sharp is survived by wife Luci, two sons, mother, brother and grandaughter. Luci Sharp will continue the family business.

## JOSEPH ALAN EBY

Mr Eby died on February 1, in Dunedin, Florida. His first beeyard was established near West Elkton, Ohio and consisted of 250 hives. During the 1920s he served as Deputy Bee Inspector. In the 1930s he established apiaries in Ohio, Georgia, Florida and Wisconsin, with a total number of hives having grown to more than 40,000. Mr Eby was the sole Eastern supplier of queens and package bees for Sears and Roebuck for a number of years, and also manufactured beekeeping equipment. He is survived by wife, Clara; one daugter, son, granddaughter and three sisters.

# North Dakota Sojourn — Part II

By CHARLES LESHER RD #2, Box 350 Northumberland, PA 17857

Ninety percent of North Dakota is a treeless plain. An exception are the Turtle Mountains, a wooded area in the north central prart of the state. Here is the beautiful Peace Gorden and Lake Menigoshe on the border between United States and Canada. In this sparse country, unsuited for farming, I met a hobby beekeeper who made a living raising birds. Hundreds of parakeets, canaries, and love birds when mature were sent to distant markets.

As I traveled toward Devils Lake in the midst of wheat, wheat everywhere, I saw fields of white; the whiteness seemed to shift and intensify. It was not until I got close at hand that I realized I was looking at thousands of white turkeys.

After hours of motoring through this hot, dry windy country, I would pass through a town and look for a public swimmng pool. When the temperature was a hundred, a cool dip was delight. I remember the swimming pool at Oaks and near that community piles of abandoned bee equipment where some beekeeper had gone broke.

North Dakota is tornado country. I have never experienced a tornado, but have seen the results of several. One night, I saw ominous black clouds churning and felt the apprehension as the wind accelerated and the storm descended on us. That time no tornado.

My most poignant memory, however, is about a tornado that destroyed a home, some buildings and took one life. It was about 30 miles northeast of Bismark. I had been working in the vicinity and heard the news, so several days later visited the setting. Nothing was amiss until I got to the farm. Not a soul was about; everything was still and silent. It appeared that the house had been picked up by the cyclonic winds, carried several hundred yards and flung on the ground with such force that only kindling wood remained. On its path heavy items such as stove, regrigerator, and sink had spilled out. The family car was turned turtle, flattened to the ground with its four wheels in the air. The nearby barn was also turned to rubble, but surprisingly a chicken coop not more than fifty feet from where the house had stood was intact. The hens were still very much alive, happily clucking and scratching in the yard. Christmas cards which someone no doubt had saved lay on the ground distributed by the fury of the storm. It was a lonely and melancholy scene.

To me, an easterner, nothing looks so barren and forlorn as a naked house on the bare prairie. I met a lady beekeeper at Washburn with a different concept. "When I was a girl," she said, "during homsteading days our house stood alone on the flat land with no neighbors for miles. One could survey the entire countryside encompassed by the broad horizon. Now everybody plants shrubery, shade tress and shelter belts. One feels so fenced and restricted. It doesn't seem like home anymore."

As one traveled west, cattle range country became more conspicuous. The bottom lands of the Missouri were excellent for growing alfalfa hay for the Herefords that populated the ranges. Banks and sand bars on the Missouri were thick with sweet clover. Spring flooding of the river delayed the clover growth so the honey flow from the source was prolonged, making the river land good honey country. George Greig of Garrison was a pioneer bee man of the Missouri Valley. In 1952 Jim Mason of Bismark was the largest beekeeper there. This territory later became the domain of the Powers Apiaries.

I spent the July 4th holiday attending a rodeo at Mandan, a western drama in its natural setting. It was fun to see the cutting horses work, the bucking broncos, the Brahma bulls, the cowboys, the action and excitement. The musical group **Sons of the Pioneers** had been imported to serenade us during the festivities. Nearby was the site of Fort Lincoln, where Custer's Last Stand began.

North Dakota is a comparatively new state, with most of the settlement made after the 1880's. In 1952 I met people who had homesteaded, who told of their experiences breaking the soil with plows pulled with oxen, of gathering bleached buffalo bones and selling them for button making.

After settlement the state had been comparatively prosperous increasing in population until the 1930;s when drought and hard times converged. A generation of injudicious land use had taken its toll: The parched plains turned to dust which blew eroded. The quarter section homestead would not support a family. Farmers went broke and moved away. Banks failed, stores closed, and many of the country towns dwindled with lasting results.

Many stayed, stuck it out and survived, demonstrating the resilient characteristics of the state's people.

At Marmouth in the southwest portion of the state, there was a half built school that was well designed and looked as though it would be an impressive edifice. I noticed that trees were growing through the scaffolding and tall weeds covering the lot so asked what had happened. I was told that hard times had come, the school district had run out of funds and the impoverished community was unable to continue the project.

The large land holding especially in the west made the country seem lonely and almost uninhabited. It was always nice after driving by endless grain fields to come to a pleasant farmstead maybe nestled in a coulee, surrounded by a shelter belt of trees and to be welcomed by a friendly beekeeper, and not only the beekeeper, but the whole family. The isolation seemed to add to the warmth of the greeting, with bees providing the common interest.

On my travels, I enjoyed the hospitality of two religious communities that kept bees, the Forest River Colony at Fordville, and a monastery at Richardson. I passed through a number of Indian reservations. At New England batteries of tall elevators lined the single railroad track, seemingly more elevators than houses in the tiny village. I visited Tioga one year after oil had been discovered near there. It had the trappings of a boomtown, store front offices, vacant lots filled with oil machinery and camp followers.

Mr. Lesslie Walling had a large bee outfit at Trenton, N.D. in the Missouri River Valley near the Montana Line. He was obliged to move some of his bee locations due to the impoundment of water by Garrison Dam. The first time I met Mr. Walling he was sitting in his honey house filling 60 pound honey cans from a tank. As we visited, he told me of some speculating he was doing in oil land. A year before, oil had been discovered in North Dakota and everyone was excited. During our discussion, he made a statement I shall long remember, "If I can keep this honey running long enough and fast enough, it is just as good as oil."

Sunshine and a slightly alkaline soil are factors that make North Dakota a good honey production state. The sun shines 15 hours a day from mid May through July. Sunshine enhances nectar secretion. The soil is ideal for the legumes alfalfa and sweet clover.

After my tour as a bee inspector, I returned to North Dakota the next spring to work for Thomas Manikowske in his commercial apiaries at Mooreton and Dwight and stayed there a number of years.

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## North Dakota Update

This past summer I returned to North Dakota for a brief visit, renewing old aquaintances and viewing some of the large modern beekeeping operations.

I stopped to see old friends Howard Cree and Douglas Carter at Inkster. At McVille I spent part of the day supering bees with Robert Brua and crew, taking the supers from a leviathan of a truck. They were expecting to super 15 large yards that day.

It was a surprise to see that Devils Lake, which I remembered as brackish, full of cattails and swarm grass; now has high water and is excellent for fishing and recreation.

At Dwight I visited Roger Schmitt who used to work with us at Manikowske's. It was nice to meet his family, and I was impressed by his modern home and the fine facilities for caring for his 1,000 colonies of bees. It was a treat to stay again with Tom and Martha Manikowske and see Tom's efficient Beehive factory, Henry Haring who predated me at their place is still on the job.

Since the 1950's the honey industry in North Dakota has burgeoned, making about a 20 fold increase. Quoting U.S. Government Agriculture Statistics.

| Year | No. of Colonies | 1,000's of Lbs. Honey Produced |
|---|---|---|
| 1953 | 13,000 | 1,320 |
| 1982 | 250,000 | 23,055 |

Over those years the best average per colony yield was in 1972 with 142 pounds.

Today migratory beekeeping is the rule rather than the exception. owners are required to register locations and the bees moved into the state must be moved to registered locations. Each spring a flood tide of bees is moved into the state for the summer honey flow. They come from as far away as Florida, Texas, Arizona, and California. The state lists eighty-three of its beekeepers as having 1,000 colonies or more.

Since the 1950's, sunflowers are a crop that favorably effects honey production. Sunflower honey is yellowish with a pleasant flavor. Sunflower pollination no doubt improves seed and oil production. From U.S. Government Agriculture Statistics. Sunflowers grown in North Dakota.

| Year | Acreage | 1,000's of Lbs. Seed |
|---|---|---|
| 1951 | 4,400 | 2,800 |
| 1932 | 36,000,000 | 3,902,800 |

A disquieting development is that the continuous farming of sunflowers has resulted in a build up of insect pest population, one of which is the head moth. Aerial spraying to control these insects has caused serious damage to honey bees.

On my recent trip, I stopped in Fargo to see my former professor Dr. Post who is now retired. I was sorry to learn from him that the state university no longer has a course in apiculture or extension personnel in beekeeping.

Theodore Roosevelt's writing of his ranching days in this land used these eloquent words:"We worked under the scorching mid-summer sun when the wide plains shimmered and waved in the heat— In the soft springtime the stars were glorious in our eyes each night before we fell asleep; and in the winter we rode through blinding blizzards —Ours was the glory of work and joy of living."□

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# Skeps


**By ROLLA E. CHANDLER, Skeppist**
**1312 No. George Mason Dr.**
**Arlington, VA 22205**


A Skep is a hand crafted, domed shaped, straw or grass, honeybee hive.

The early Colonists to this Country brought honeybees to the "New World", in "Skeps", which had been in use in Europe for hundreds of years. Honeybees are not native to North America. As a result, Skeps were used for many years by the European Settlers, particularly in the Eastern States. Gradually, Skeps, were replaced in favor of the hollow log "Gum" because of the plentiful supply of hollow trees in this country. Invention of the present day movable frame beehive in the mid-1800's has, for all practical purposes, replaced the "Skep" and "Gum" beehives as a home for the honeybee. Skeps are still in use in Europe, where straw and grass is less expensive than lumber for beehives. "Bee Trees" are still quite common in wooded areas.

Skeps are rare, and "Skeppists" (one who makes Skeps), even more so. Most people are familiar with the traditional image of a "Skep", but few have ever seen one, and even fewer, the opportuntiy of owning one. Skeps can be made from a wide variety of grain and grass stems. Typically, grain straw such as wheat and rye is more traditional, but is obviously available only during a short period of the year. That being the case, many types of native grasses, and even cattails, make a fine traditional type of Skep.

A Skep is about 14 to 16 inches in diameter and about the same height, weighing about 5 or 6 pounds. Being sturdy and well made, it will endure for many years. Skeps must be kept dry.

Skeps, in this day and age, are a most unusual Colonial and Early American type of decorative item, being displayed in home kitches, dining rooms, family rooms, dens, offices, and such places of business as Craft Shops, Herb Shops, Natural food stores, Antique shops, Florists shops, and Herb Gardens. they would blend nicely into most any setting where Colonial, Early American, or "Country" furniture and furnishings are used or are on display. They look best in an elevated setting, e.g., a corner shelf, on top of a cupboard, bookcase, stove, refrigerator, file cabinet, on a Display case, among baskets, and the like. For the Mormons, the "Beehive" shaped Skep depicts a thrifty, hard working Community. A skep is an instant conversation piece, wherever it is situated.

A wide range of minature "Beehives", in the shape of Skeps exist, most recognizable in the form of Honey containers, banks, and other table top items. Usually they are about 3 to 5 inches in diameter, and about the same height. A very recognizable miniature is the old (and new) cast iron string ball holder shaped as a Skep.

Feel free to contact me with regard to "Skeps".

# A PEACE CORP BEEKEEPER IN GUATEMALA

**Peter Wotoweic**
**BOX 121**
**SPENCER, OHIO 44275**

Beekeeping in rural Guatemala is usually a part of subsistance lifestyle. A few commercial apiaries with frame type hives can be found, but honey production often consists of primitive log, straw skep or other unique colony housing.

Several United States Peace Corp volunteer beekeepers are presently in Guatemala. Development of demonstration projects and teaching modern management practices using locally available materials and technology is their job. As you might expect, they face challenges of limited funds, supplies and local traditions and values.

Pat Rey is one of those volunteers. He and Katherine, his wife, a Peace Corp forestry volunteer, live in a small town near historic Antigua, Guatemala. Surrounded by tropical vegetation and nestled under towering volcanic peaks is the demonstration center Pat manages. Its overall purpose is to show a variety of small farm practices which, if adopted by the local farmers, would increase their income and self-sufficiency. The major specific focus of the center however, is on bee management.

Honey production offers a realistic opportunity for local farmers. Most of those involved with bees simply produce honey for personal use. A commercial market exists, but traditional rural Guatemalan production techniques do not lend themselves to commercial volume operation. While conversion to Langstroth frame hives seems logical, the cost of such a move to a local farmer is prohibitive.

One of the more promising approaches Pat is working with is the Kenya top bar hive. Locally called the marimba hive because of the top view similarity to the musical instrument of that name, it is relatively easy to construct from low cost materials.

Pat says that management of the Kenya top bar hive requires more frequent attention under local climate conditions than does the Langstroth frame five, but generally less time is involved. Management practices are simpler; a point which makes for quicker acceptance by local farmers.

Perhaps the clincher for local acceptance of this hive will occur in 1985-86 with the predicted influx of the Africanized bee. The Kenya top bar hive is well suited to management of aggressive bees. According to Pat, Africanized bees under Central American conditions are excellent foragers, but are oriented to repeated swarming. Traditional Langstroth frame management practices result in small amounts of surplus honey harvest.

**Pat Rey inspects comb from a Kenya style hive**

The flexibility of the Kenya hive allows for rapid access, removal and replacement of frame bars which support the comb. That makes for less aggravation of the colony, and surely less aggravation to the beekeeper. Frequent small harvests of honey during flows accumulate to large annual harvests for hives under tropical conditions. At the same time it minimizes swarming.

Honey producing in these hives is sold by the comb or is extracted by crushing and draining the comb. Every effort is made to adapt more productive techniques to local means and needs. Homemade is the key word, even as it applies to smoker construction.

In addition to managing the demonstration center, Pat is active in extension work in the surrounding villages. He enlists the aid of local progressive beekeepers to help him teach and assist others in getting started or modernized.

Raising queens and bees for distribution is another major function of the center. Traditional frame nucs are used because Pat's experience and techniques with that system produce the best results.

Though busy with her own work in setting up a nursery to raise tree seedlings for reforestation, Katherine shares Pat's interest in bees and in working in rural Guatemala. As a Peace Corp husband/wife team, you can be sure they are providing valuable assistance to rural Guatemalans and creating a positive image of the United States as well.

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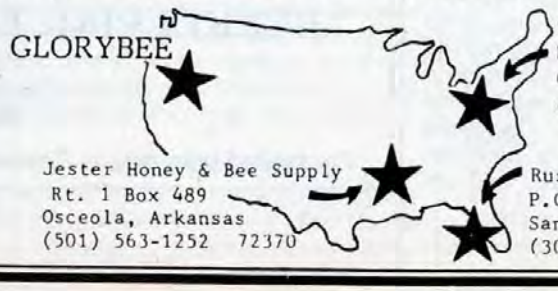


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# The Placement of Beehives

by PETER VAN BORST

In this article I'd like to discuss the placement of hives within the apiary. Of course, the location of the beeyard itself is of critical importance. It has been said many times that a poor beekeeper will do well in a good area while even an expert may starve in a poor locale. But then again, the good beekeeper knows when it's time to move and where to go. I like to place my bee right in their pasture. It's true that they will fly miles if they have to but to succeed they should be in the middle of acres of forage. The next consideration would be access. No amount of distance between the hives and the truck is acceptable. When there is lifting to be done, it is enough to get the honey or the hive on the truck bed, without having to carry it across a field full of gopher holes or treacherous rocks. The road itself should be passable in all weather unless you don't mind not being able to super at the right time because of a muddy road that'll sink you right up to your axles. Finally, the hives should face south, and a south facing slope would be ideal, if luck would have it. Naturally, we take what we can get in the way of apiary locations.

In the west, most large-scale beekeepers use special booms to load and unload their trucks. These trucks generally hold about 120-hives— two layers of sixty. The hives are unloaded in pairs, one on top of the other, and are separated once they are on the ground. Taken one row at a time, you have six hives coming off the truck on each side, so it is common to place them on the ground in rows of six. There would then be ten rows of six on each side of the truck. An alternative is to set the hives three deep which gives three long rows of twenty on each side of the truck, running parallel to the roadway. This requires moving the truck ahead a couple of times but it keeps the hives close to the bed which is handy when operating the boom as well as when harvesting the honey. In both arrangements you have rows of hives, usually all painted alike, which causes real problems with drifting. Drifting means the accumulation of field bees in certain hives, usually at the ends of rows, and has been recognized as a problem for years. There are still many beekeepers that do nothing to prevent it. It causes uneven strength in the colonies which interferes with routine management and actually decreases overall production. Drifting also promotes the spread of brood disease and encourages robbing.

If the hives must be placed in rows, one can, without much effort, turn the hives so that the entrances do not point the same direction. Some beekeepers paint the hives different colors although I feel that it would be more beneficial to paint the hive tops with colors. Just picture the apiary from high above and you'll see the reason for this. But if one is not constrained to placing the hives in straight rows, drifting can be eliminated. Queen breeders have studied hive placement thoroughly and agree that the ease of queens to identify their own hive is critical to successfuly mating flights. Many of them scatter their hives over large areas, often in forests or groves, to break up the monotony and give each colony its own "spot". Of course, in an ordinary apiary, you don't want rocks and trees in the way of routine operation. So what is the logical way to proceed? One beekeeper I knew was placing his hives in groups of eight. There would be pairs facing each of the four compass directions. I have taken this one step further— I place them in groups of ten to twelve in a circle. If the apiary is level the entrances can point away from the center of the circle. If there is a slope, they have to face downhill.

When the hives are being worked, I just go around the circle. This presents the convenience you have with hives in rows, plus you can place any extra equipment you may need in the center of the group, where it is never far from hand. Each group is worked as a unit and any equalizing can be done within it. Working like this provides convenient stopping points to take or break or fetch more equipment, and you don't get that lost feeling you do in the middle of a large bunch of hives. Just counting the number of hives in a large apiary without any grouping can be tough! You go up one side and down the other and come up with a different count each time.

Many times I've had to unload hives after dark when the bees were clustered on the outside, ornery, waiting to sting my hands when I reach for them. At such moments the finer points of hive placement may not come into view. Nevertheless, a few minutes spent in planning will make the difference between an apiary that is functioning well or not, for months afterwards.□

# The Challenge Of The Varroa Mite

By MR. PHILLIP MARIOLA
ATI -- WOOSTER, OHIO

The present decade is a very interesting time to be a beekeeper. The challenges (I prefer the word "challenges" to "problems") that face beekeeper throughout the world are serious and will test our ingenuity to the limit. A few examples of these challenges are:

—the world honey market and its effect upon honey prices and beekeeping in the U.S.A.

—the adulteration of honey

—pesticide kills of honey bees

—the Africanized bee, which is now in Costa Rica and moving north toward the USA at a rate of 200-500 kilometers per year.

Any of the above topics would be interesting to write about, and there are in fact references to them nearly every month in the bee journals. I have chosen, however, to write about still another "challenge" for beekeepers worldwide—the Varroa mite. It is not yet something with which North American beekeepers have to deal, but it is more likely just a matter of time until it is, as Varroa has been found in Paraguay and Brazil.

I though that it might be interesting to view the Varroa situation from a different perspective, that of Europe. I have been fortunate to gain access to various French beekeeping magazines, especially "*L'Abeille De France*" and "*La Sante' De L'Abeille*," (as well as "*Bee World*," the journal of the International Bee Research Association in England, which we receive in the ATI library). It is obvious that the Europeans are deeply concerned about the potential devastation of their bee population by the Varroa mite. Every month there are at least two articles in the French journals about Varroa and the various efforts to combat it.

It is not surprising that the French are concerned. The Varroa mite has already cuased tremendous bee losses in Eastern Europe. In Bulgaria, around 200,000 colonies have died-off, which represents a loss of one-third of Bulgaria's bee population. In the USSR, certain agricultural regions have been deprived of honey bee pollination because of bee losses to Varroa. There are estimates of as many as 500,000 colonies lost per year in the USSR to Varroasis. In Eastern Czechoslovakia where the mite first entered the Country, 75% of the bee population has disappeared. The Varroa mite is now causing severe bee losses in Germany and has crossed the Rhine River into France. Hence, the concern shown through the French bee journals.

## The Spread Of Varroa To The West

Varroa jacobsoni was originally a parasite on *Apis cerana,* the Asian honey bee, which lives in more or less of a balanced relationship with the mite. As the European honey bee, *Apis mellifera,* was introduced into Asia to boost honey production, it became infested with the Varroa mites. *Apis mellifera* has no natural defenses against the mite. In the case of *Apis cerana,* the mites multiply almost exclusively on drone brood. This means that they can reproduce only during brief periods when drone brood is present. Even then a colony of *Apis cerana* can easily withstand the loss of a few hundred drones. Unfortunately, the Varroa mite isn't as selective with *Apis mellifera,* where it attacks worker and drone brood. As one can imagine, with all the traffic back and forth in honey bees between Europe and Asia, it was only a matter of time until the mites arrived in Eastern Europe, via the USSR and Bulgaria.

## Biology Of The Varroa Mite (Ritter 1981)

The adult Varroa jacobsoni is 1.1 to 1.2 mm long and 1.5 to 1.6 mm wide and can be seen with the nake eye. It has stiff hairs on its ventral side which tangle with those of the bee, making it almost impossible for the bee to knock the mite off. The mites most commonly hold on to the bee between the first abdominal segments and are difficult to detect. They are also found between the head and thorax and between the thorax and the abdomen. These are all places where the mite can easily penetrate the intersegmental membrane and gain access to the haemolymph (bee blood).

The adult bee serves mostly as a means of transport for the mite. It is the larvae that are most seriously affected. The female mite will enter a brood cell shortly before it is capped and begin laying eggs as soon as the larva has finished spinning its cocoon. The eggs hatch in 24 hours—the complete development of the female mite take 8 to 10 days. The developing mites parasitise the bee pupae by feeding on the haemolymph, causing deformed wings, legs, abdomens. The mites mate in the capped cells, at which time the males die. The old and the young mated females remain in the brood cell until the adult bee emerges, at which time they leave the cell with the bee—attached to the bee. The young female mites seek a brood cell again after 4 to 13 days. They live about two months in the summer and five to eight months in the winter.

The number of mites is small in the spring, increases during the period of brood build-up, and is largest in autumn.

The colony is gradually weakened as the mites deform more and more pupae. With this loss of vitality, the colony becomes weaker and weaker until it finally dies, often within three years of mite infestation.

## Efforts At Control Of Varroa

Various methods have been tried in an effort to combat the Varroa mite. Biological control methods, including the removal of infested brood, have not been very successful. The Bulgarians have tried dozens of different drugs, oils, acids, and plant preparations, as have beekeepers in Poland, Greece, and Yugoslavia. As can be imagined, treatments must be applied at a time when no brood is present, to be able to reach the mites which would otherwise be sheltered in capped brood cells. Some countries even tried burning infested colonies, but have abandoned this practice, as it was not successful.

One chemical company which has come to the forefront in the fight against Varroa is Ciba-Geigy Corporation of Switzerland. They have come up with a product called Folbex VA (the V stands for Varroa, the A for Acarine disease), in the form of fumigant strips that are burned in a sealed colony during a period when there is no brood present. Folbex does appear to be more consistently successful so far than anything else on the market. Ciba-Geigy is promoting it heavily, with full page ads on the insider cover of "*L'Abeille De France,* " as well as large ads in "*Bee world.*" But even

CONTINUED ON NEXT PAGE

# ANSWERS TO "TESTING YOUR BEEKEEPING KNOWLEDGE" (From Page 174)

## Answers to Testing Your Beekeeping Knowledge

**1. False** Not all pesticides are equally hazardous to honey bees. Based on both laboratory and field tests, pesticides are normally classified as either:

**Highly toxic** — Severe losses may be expected if these pesticides are used when bees are present at treatment time or within a day thereafter.
**Moderately toxic** — Can be used around bees if dosage, timing, and method of application are correct, but should not be applied directly on bees in the field or at the colonies.
**Relatively nontoxic** — Can be used around bees with a minimum of injury. In addition to several insecticides, herbicides, fungicides, defoliants and desiccants belong in this group.

**2. True** Wax moth larvae receive most of their nourishment from impurities in the wax, and in obtaining these impurities they ingest the wax itself.

**3. False** Acarine mites, not Varroa live and develop in the respiratory system of adult honey bees.

**4. True** While colonies may be completely destroyed by pesticides, most often only the field bees are killed. In this situation, beekeepers may not even realize that they have suffered a loss.

**5. True** One of the best ways of controlling ants in hives, is to maintain strong colonies.

**6. True** Death normally occurs over the four day period described in the question.

**7. True** Below 40°F, no larval feeding or growth takes places. The larvae seem to become dormant.

**8.** C
**9.** B
**10.** G
**11.** L
**12.** J
**13.** I
**14.** B
**15.** E

**16.** In order to keep bees in an urban/suburban area, there are many things that beekeepers should do to keep their bees from interfering with their neighbors' activities.
1. Maintain gentle colonies, use strains that have been selected for their gentleness and requeen on a regular schedule.
2. Practice good management, prevent robbing and control swarming.
3. Furnish a water supply.
4. Use a hedge or fence to keep colonies out of view. This helps to reduce vandalism and concern by neighbors, and forces the bees to fly above head level thus reducing the chance of stinging.
5. When manipulating and examining hives, keep the neighbors' activities foremost in mind. Work the bees on warm sunny days, when the field force will be actively foraging.
6. Having sufficient equipment to manage your colonies is a must.
7. Top entrances should be avoided in congested areas during the summer season. Whenever a hive with a top entrance is opened and the supers removed, hundreds of bees will be flying around, confused because their entrance is gone.
8. Do not keep more colonies in the backyard than the area forage can support or more than you have time to care for adequately.

There were a possible 20 points in the test today. Check the table below to determine how well you did. If you scored less than 12 points, do not be discouraged. Keep reading and studying, you will do better in the future.

**Number of points correct**

20 — 18 Excellent
17 — 15 Good
14 — 12 Fair

## VARROA MITES (Continued)

Ciba-Geigy admits that "complete eradication of Varroa disease will not be possible. In other words, beekeepers are going to have to learn to live with it." (Muschter, 1982)

In summary, we can see from the experience of European beekeepers that Varroasis is serious and can wipe out large numbers of honeybee colonies. Most importantly for us in the USA is the realization that Varroa mites will almost surely be here in years to come. Varroa is present in some Africanized colonies in South America (they were introduced into Paraguay on bees shipped from Japan), and it is likely that they will eventually arrive in the U.S.A. with these Africanized bees. We need to educate ourselves about Varroa and keep abreast of the control methods in countries where the mite is present now. Varroa mites are a major problem, or should I say, challenge, for beekeepers everywhere.

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| BOXES | | QUANITY | WAXED | PER BOX | UNWAXED | PER BOX |
|---|---|---|---|---|---|---|
| 1 | of | 10 | $1.50 each | $15.0 | 0$1.30 each | $13.00 |
| 1 | of | 26 | $1.35 each | $35.10 | $1.15 each | $29.90 |
| 1-2 | | 52-104 | $1.27 each | $66.04 | $1.07 each | $55.64 |
| 3-6 | | 156-312 | $1.22 each | $63.44 | $1.02 each | $53.04 |
| 7-10 | | 364-520 | $1.17 each | $60.84 | $0.97 each | $50.44 |
| 11-20 | | 572-1040 | $1.12 each | $58.24 | $0.92 each | $47.84 |
| 21-60 | | 1092-3120 | $1.09 each | $56.68 | $0.89 each | $46.28 |
| 61-100 | | 3172-5200 | $1.04 each | $54.08 | $0.84 each | $43.68 |
| 101-200 | | 5252-10400 | $1.00 each | $52.00 | $0.80 each | $41.60 |
| | | 10452- up | $0.98 each | $50.96 | $0.78 each | $40.56 |

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72 FRAMES PER BOX

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|---|---|---|---|---|---|---|
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| 1 | of | 20 | $1.25 each | $25.00 | $1.09 each | $21.80 |
| 1-2 | | 72-144 | $1.14 each | $82.08 | $0.98 each | $70.56 |
| 3-4 | | 216-288 | $1.09 each | $78.48 | $0.93 each | $66.96 |
| 5-7 | | 360-504 | $1.04 each | $74.88 | $0.88 each | $63.36 |
| 8-14 | | 576-1008 | $0.99 each | $71.28 | $0.83 each | $59.76 |
| 15-42 | | 1080-3024 | $0.96 each | $69.12 | $0.80 each | $57.60 |
| 43-70 | | 3096-5040 | $0.91 each | $65.52 | $0.75 each | $54.00 |
| 71-140 | | 5112-10080 | $0.88 each | $63.36 | $0.72 each | $51.84 |
| | | 10152 - up | $0.82 each | $59.04 | $0.66 each | $47.52 |

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# Who's Who in Apiculture

To supply a handy reference of the names and addresses of state and provincial apiary inspectors, secretaries of beekeepers' associations, extension workers in beekeeping, and other information often needed by our readers, we have corrected our Who's Who in Apiculture as of March 1, 1984

| State or Province | Bees on Combs Admitted | Apiary Registration Req. | Fee | Secretary State Association | Address |
|---|---|---|---|---|---|
| Ala. | Not Allowed | Yes | Yes | Mrs. R.V. Harrell, | Hayneville 36040 |
| Alaska | None | No | | Cook Inlet Beekeepers Assoc., | P.O. Box 8-173, Anchorage 99508 |
| Alta.* | Not Allowed | Yes | No | Louise Zwaenepoel, | 5908 137th Ave., Edmonton T5A 1C9 |
| Ariz. | Cer. & Per. | Yes | No | Clarence L. Benson, | Box 858, Oracle 85623 |
| Ark. | Cer. & Per. | Yes | No | Darrel Jester, | P.O. Box 337, Osceola 72370 |
| B.C.* | Not Allowed | Yes | No | A. King, | 638-1701 Cedar Hill Cross Rd., Victoria V8P 2P9 |
| Calif.* | Certificate | Yes | No | Frank Johnson, | 2114 Westminster Dr., Riverside 92506 |
| Colo.* | Cer. & Per. | Yes | Yes | Mrs. Tom Jones, | 605 No. Columbus, Yuma 80559 |
| Conn.* | Certificate | Yes | Yes | Fred Hartman, | 46 Climax Rd., Simsbury 06070 |
| Del.* | Cer. & Per. | Yes | No | Connie Groll, | R.D. #1, Box 132D, Lewes, 19958 |
| Fla.* | Cer. & Per. | No | No | James C. Mashburn, | 2412 Tupelo Terrace, Tallahassee 32303 and Raymond Duncan, 2002 S. Forbes, Plant City 33566 |
| Ga.* | Cer. & Per. | Yes | No | Cecil T. Sheppard, | 3204 West Mart Lane, Doraville, 30340 |
| Hawaii* | Not Allowed | No | No | Lee Ong Chun, | 2115 N. School St., Honolulu 96819 |
| Idaho* | Certificate | Yes | Yes | Debbie Millet, | Rt. 1 Box 8 Bee, Marsing 83639 |
| Ills.* | Cer. & Per. | Yes | No | Rita Taylor, | Rt. 2, Pleasant Plains 62677 |
| Ind.* | Cer. & Per. | Yes | No | Claude F. Wade, | Room 613, State Office Bldg., Indianapolis 46204 |
| Iowa* | Cer. & Per. | Yes | No | Glen L. Stanley, | Agric. Dept., Wallace Bldg., Des Moines 50319 |
| Kans.* | Cer. & Per. | Opt. | Yes | Duane Levin, | Box 5, Stuttgart 67670-0005 |
| Ky.* | Cer. & Per. | Yes | Yes | Charles Barton, | 791 Sherwood Dr., Lexington 40502 |
| La. | Not Allowed | Yes | No | Ray Landry, | Rt. 1, Box 1448K, Breaux Bridge 70517 |
| Man.* | Not Allowed | Yes | No | Don Dixon, | 910 Norguay Bldg., Winnipeg R3C 0P8 |
| Me.* | Certificate | Yes | Yes | Ann Pacquin, | 163 Highland Cliff, Westbrook, ME 04092 |
| Md.* | Permit | Yes | No | John Romanik, | 3200 Pine Orchard Lane, Ellicot City 21043 |
| Mass.* | Cer. & Per. | No | No | Lynn Lees, | 29 Tower Rd., Lexington 02173 |
| Mich.* | Not Allowed | Yes | Yes | Beradette Dean, | 2633 Sashabaw, Ortonville 48462 |
| Minn.* | Cer. & Per. | Yes | Yes | Fred Holte, | 2185 W. County Rd., B, Roseville 55113 |
| Miss.* | Cer. & Per. | No | | Harry R. Fulton, | P.O. Box 5207, Mississippi State 39762 |
| Mo* | Cer. & Per. | No | No | Jean Yemm, | Rt. #1 Box 169, Marquand 63655 |
| Mont.* | Cer. & Per. | Yes | Yes | JoAnne Speelman, | 445 Addison Square, Kalispell 59901 |
| Nebr.* | Cer. & Per. | Yes | No | Vicky Stutzman, | Rt. 2, Box 189, David City 68632 |
| Nev. | Permit | Yes | Yes | Bill Goff, | 14060 Edmands Dr., Reno 89511 |
| N.B.* | Not Allowed | Yes | No | Mrs. Eva G. Logan, | Box 9, Stanley E0H 1T0 |
| N.H.* | Certificate | No | | Franics W. Dodge, | P.O. Box 91, Goffstown 03045 |
| N.J.* | Certificate | No | | Mrs. Elizabeth Rodrigues, | 157 5 Point Rd., Colts Neck 07722 |
| N.M. | Certificate | Yes | Yes | Mrs. Betty J. Cole, | 600 N. Bosque Loop, Bosque Farms 87068 |
| N.Y.* | Certificate | Yes | No | Jon MacDonald, | Paris Hill Road, Sauquoit 13456 |
| N.C.* | Cer. & Per. | No | | Dorothy Humble, | Rt. 3, Box 160, Liberty 27298 |
| N.D. | Cer. & Per. | Yes | Yes | John Miller, | Box 213, Gackle 58442 |
| N.S.* | Not Allowed | Yes | No | Earl Blades, | P.O. Box 1421, Truro 5V2 |
| Ohio* | Cer. & Per. | Yes | Yes | Glenn Rader, | Walnut St., 45877 |
| Okla.* | Certificate | Yes | No | Pat Grayson, | Rt. 1, Box 1113, Owasso 74055 |
| Ont.* | Permit | Yes | No | P. W. Burke, | Dept. of Env. Biology, Graham Hall, Univ. of Guelph N1G 2W1 |
| Oreg.* | Certificate | Yes | Yes | Rose Kerr, | Amity, OR 97101 |
| Pa.* | Cer. & Per. | No | No | Mrs. Glenn Crimbring, | R. D. 1, Canton 17724 |
| P.E.I.* | Not Allowed | No | No | Ruby Bakker, | P.O. Box 1114, Charlottetown, CIA 778 |
| P. Rico | Not Allowed | No | No | Tito Nieves, | P.O. Box 471, Lares, Puerto Rico 00669 |
| Que.* | Not Allowed | No | No | L. Dion, | C.P., 656 St. Hyacinthe, Que. |
| R.I.* | Certificate | Yes | No | Michael Boday, | Nate Whipple Hwy., RD #5, Cumberland 02864 |
| | | | | Judy Doan, | 1263 Redman Rd, Hamlin, NY 14464 |
| Sask.* | Not Allowed | Yes | No | John Gruszka, | 800 Central Ave.,Prince Albert S6V 6Z2 |
| S.C. | Certificate | No | | Bill Baker, | Rt. 3, 398-C, Sumter 29150 |
| S.D.* | Certificate | Yes | Yes | Gary Schmidt, | Star Rt. 2, Box 6, Martin 57551 |
| Tenn.* | Cer. & Per. | Yes | No | Howard Kerr, | Rt. 11, Box 7 Big Springs Rd., Maryville 37801 |
| Texas* | Cer. & Per. | Yes | No | Beth Mercer, | Rt. 1 Box 95B, Edcouch 78538 |
| Utah | Certificate | Yes | Yes | David S. Miller, | Box 15807, Salt Lake City, 84115 |
| Vt.* | Certificate | Yes | No | Corlie Magoon, | Colchester 05446 |
| Va. | Cer. & Per. | No | | Maryethel Miller, | Box 212C, Millboro 24460 |
| Wash.* | Certificate | Yes | No | Alice Bounds, | P.O. Box 602, Toppenish, 98948 |
| W. Va.* | Cer. & Per. | Yes | No | Mrs. Sarah Hutchinson, | Webster Springs 26288 |
| Wisc.* | Cer. & Per. | No | | Shelby Schamens, | Rt. 5, 715 N., Buena Vista, EauClair 54703 |
| Wyo.* | Certificate | Yes | No | Jim Miller, | P.O. Box 619, Sundance 82729 |

*Publish a newsletter sent to State Association Members

| State or Province | Professor in Charge of Beekeeping Course (Write Prof. of Apiculture c/o State University) | Extension Personnel in Beekeeping (Write Beekeep. Exten. Spec. c/o State University) | Inspector State or Province Write c/o Dept. of Agric.) State Capitol |
|---|---|---|---|
| Ala. | Dr. John Pritchett | Carl Dennis, Auburn | John Bloch, Montgomery 36109 |
| Alaska | | Wayne Vandre | John Cramer, Pouch A Wasilla |
| Alta. | Ted Leichner, Fairview | D. MacDonald, Falher TOH 1MO | D. Colter, Falher, TOH 1MO |
| Ariz. | Dr. Norbert Kauffeld, Tucson | | R.W. Hancock, Phoenix 85005 |
| Ark. | | | Donald E. Bailey, Little Rock 72205 |
| B.C. | Dr. Mark Winston, Burnaby | Douglas McCutcheon, Surrey | John Corner, Vernon V1T 4K7 |
| Calif. | Dr. Norman Gary, Davis | Dr. Eric C. Mussen, Davis | Leo Vanderpool, Sacremento 95814 |
| Colo. | Dr. Robert Simpson, Ft. Collins | | James Thurman, Denver 80203 |
| Conn. | Prof. Alfonse Avitablile, Waterbury | Prof. Alfonse Avitablile, Waterbury | Allen Poole, New Haven 06504 |
| Del. | Dr. Dewey Caron, Newark | Dr. Dewey Caron, Newark | Michael Brown, Dover 19901 |
| Fla. | Dr. Tom Sanford, Gainesville | Dr. Malcom Sanford, Gainesville | James P. Herndon, Gaineville 32601 |
| Ga. | Dr. Alfred Dietz, Athens | Rodney Coleman, Athens | James P. Harron, Atlanta 30334 |
| Hawaii | | | None |
| Idaho | | | Dr. Robt. C. Saunders, Boise 83707 |
| Ill. | | E.E. Killion, Paris | E.E. Killion, Paris 61944 |
| Ind. | Bill Chaney, W. Lafayette | Prof. D.L. Matthew, W. Lafayette | Claude F. Wade, Indianapolis 46204 |
| Iowa | Richard Trump, Ames | G. Stanley & R. Wells | Glen L. Stanley, Des Moines 50319 |
| Kans. | E.E. Killion, Paris | | Gary R. Ross, Topeka 66612 |
| Ky. | J.W. Stocker, Richmond | Dr. R. Scheibner, Lexington | Wm. G. Eaton, Frankfort 40601 |
| La. | Dr. Jerry Grayes, Baton Rouge | Dale Pollet, Baton Rouge | Dr. John Impson, Baton Rouge 70893 |
| Me. | | Anthony Jadczak, Augusta | Anthony Jadczak, Augusta 04333 |
| Man. | Dr. S.C. Jay, Winnipeg | Don Dixon, Winnipeg | Don Dixon, Winnipeg R3C OP8 |
| Md. | Dr. Lee Hellman, College Park | Melanie Odlum, college Park | Barton Smith, Jr. Annapolis 21401 |
| Mass. | Richard Bonney, Amherst | Richard Bonney, Amherst | Thomas Leonard, Boston 02202 |
| Mich. | Dr. Roger Hoopingarner, E. Lansing | Dr. Robert Hoopingarner, E. Lansing | John Dreeves, Lansing 48909 |
| Mo. | Dr. Flernoy Jones, Columbia | Dr. Flernoy Jones, Columbia | Joseph Francka, Jefferson City 65102 |
| Mont. | | | Willard A. Kissinger, Helena 59601 |
| Nebr. | Cliff Walstrom Lincoln | Dr. David Keith, Lincoln | Marion D. Ellis, Lincoln 68509 |
| Nev. | Dr. Harold Arnett, Reno | | Floyd Hilbig, Reno 89510 |
| N.B. | | | Eric Richard, Nashwaah Bridge EOH 1RO |
| N.C. | Dr. John Ambrose, Raleigh | Dr. John Ambrose, Raleigh | James F. Greene, Raleigh 27611 |
| N.H. | Mr. Robert Palge | | Dr. Siegfred, Theuke |
| N.J. | Dr. Radcliffe B. Roberts, New Bruns. | | Jack Matthenius Jr., Phillipsburg 08865 |
| N.M. | Dr. Elbert Jaycox, La Cruces | | Bob G. Campbell, Las Cruces 88003 |
| N.Y. | Dr. Roger A. Morse, Ithaca | Dr. Roger A. Morse, Ithaca | c/o Walter T. Brown, Albany, NY 12235 |
| N.D. | Dean McBride, Fargo | Dr. Dennis Kopp, Fargo | Judy Carlson, Bismarck 58505 |
| N.S. | | Lorne Crozier, Truro | Lorne Crozier, Truro |
| Ohio | Dr. Walter Rothenbuhler, Columbus | Gordon Rudloff, Columbus | Gordon Rudloff, Reynoldsburg 43068 |
| Okla. | Dr. Moffett, Stillwater | | Mike Vandeventer, Oklahoma City 73105 |
| Ont. | Dr. R.W. Shuel, Guelph | Prof. P.W. Burke, Guelph | Prof. P.W. Burke, Guelph N1G 2W1 |
| Oreg. | Dr. D.M. Burgett, Corvallis | Dr. D.M. Burgett, Corvallis | David Turner, Salem 97310 |
| Pa. | Dr. Robert Berthold, Doylestown | Dr. Clarence Collison, State College | James Steinhauer, Harrisburg 17120 |
| P.E.I. | | Elaine Clark, Charlottetwon | Elaine Clark, Charlottetwon C1A 7J8 |
| P. Rico | Dr. M. Moya, Quintana | Jose Munoz, Humacao | |
| Que. | Dr. J. Louis Villeneuve, Sainte Foy | Dr. J. Louis Villeneuve, Sainte Foy | Dr. J. Louis Villeneuve, Sainte Foy |
| R.I. | | | Robert Relli, Providence |
| Sask. | Dr. S.H. Nelson, Saskatoon | John Gruszka, Prince Albert | John Gruszka, Prince Albert |
| S.C. | Dave Alverson, Clemson | J. Howard Jr., Clemson | J. Howard Jr., Clemson 29621 |
| S.D. | Dr. Robt. Walstrom, Brookings | | Stuart Adrian, Pierre 57501 |
| Tenn. | Dr. Charles Pless, Knoxville | Harry E. Williams, Knoxville | Thomas Hart, Nashville 37204 |
| Texas | Paul Jackson, College Station | Dr. John Thomas, College Station | Paul Jackson, College Station 77843 |
| Utah | Prof. Wm. P. Nye, Logan | Reed S. Roberts, Logan | Ed Bianco, Salt Lake 84114 |
| Vt. | | | Richard Drutchas, Montpelier 05602 |
| Va. | Dr. Richard Fell, Blacksburg | Dr. Richard Fell, Blacksburg | Homer Powers, Richmond 23209 |
| Wash. | Dr. Carl Johansen, Pullman | Dr. Carl Johansen, Pullman | James C. Bach, yakima 98903 |
| W.Va. | Dr. James Amrine, Morgantown | Barawell, Montgomery, Charleston | Marilyn Conrad, Charleston 25305 |
| Wisc. | Dr. Walter Gojmerac, Madison | Dr. Walter Gojmerac, Madison | Walter Gojmerac, Madison 53713 |
| Wyo. | Dr. W.T. Wilson, Laramie | | Walter Patch, Cheyenne 82002 |

## GOVERNMENT AGENCIES

**USDA — AGRICULTURAL RESEARCH SERVICE,** National Program Staff, Dr. Robert D. Jackson, National Program Leader, Room 222, Bldg. 005, BARC — W, Beltsville, MD 20705

**CANADA DEPARTMENT OF AGRICULTURE** — Research Coordinator, Dr. R.M. Prentice, Room 7109, Sir John Carling Bldg., Ottawa, Ont., Canada K1A 0C5. **ONTARIO REGION**—Dr. T.A. Gochnauer, Ottawa

Research Station, Ottawa K1A 0C6. **WESTERN REGION**—Dr. T.I. Szabo, Box 29, Beaverlodge, Alta. T0H 0C0.

**NORTHEASTERN REGION** — Dr. H. Shimanuki, Laboratory Chief, Bioenvironmental Bee Laboratory, Rm. 200, Bldg. 476, BARC — East, Beltsville, MD 20705.

**NORTH CENTRAL REGION** — Dr. Eric Erickson, Research Leader, **North Central States Bee Research Unit,** Rm. 436, Russell Laboratories, Univ. of Wisconsin. Madison, Wis. 53706.

**SOUTHERN REGION** — Dr. Thomas E. Rinderer, Research Leader, **Bee Breeding & Stock Center Laboratory,** RR 3, Box 82-B, Ben Hur Rd., Baton Rouge, LA 70808. **WESTERN REGION** — Dr. W. T. Wilson, Laboratory Leader, **Honeybee Pesticides/Diseases Research Laboratory,** University Station, P. O. Box 3168, Laramie, Wyoming 82071. Dr. F. D. Parker, Laboratory Leader, **Bee Biology & Systematics Laboratory,** UMC 53, Utah State Univ., Logan, Utah 84322. Dr. M.D. Levin, Center Director & Research Leader, Honey Bee Nutritional Unit; and Dr. G. M. Loper, Research Leader, Honey Bee Crop Pollination Unit, **Carl Hayden Bee Research Center,** 2000 East Allen Road, Tucson. Ariz. 85719.

**UNITED STATES MARKETING AID** — U. S. Dept. of Agriculture, Washington, D. C. **MARKETING PROGRAMS,** Specialty Crops Branch, Fruit and Vegetable Division, Agricultural Marketing Service, USDA, Washington, D. C. 20250, **HONEY MARKET NEWS,** Market Reports Section, Fruit and Vegetable Division, Market News Branch, 2503 South Building, Washington, D. C. 20250, **PRICE SUPPORT PROGRAM,** Analysis Division, Agricultural Stabilization and Conservation Service, USDA, Washington, D. C. 20013, Harry Sullivan. Tel. 202-447-6758.

**EXTENSION SERVICE** (Federal) Paul W. Bergman, Pesticide: Use & Impact Assessment, USDA, Washington, D. C. 20250.

## INDUSTRY ORGANIZATIONS

**AMERICAN BEE BREEDERS ASSOCIATION** — President, Reg Wilbanks, P.O. Box 12, Claxton GA; 1st Vice President, Roy Weaver Jr., Rt. 1 Box 111, Navasota, TX; 2nd Vice President, Richard Harrell Jr., Box 173, Hayneville, AL; Secretary—Treasurer, Mrs. R.V. Harrell, Box 215, Hayneville, AL.

**AMERICAN BEEKEEPING FEDERATION — President, Larry Gunter, Box 637, ND 58788; Secretary—Treasurer, Frank A. Robinson, 13637 N.W. 39th Ave., Gainesville, FL 32606.**

**AMERICAN HONEY PRODUCERS ASSOCIATION** — President Berna Johnston, Box 734, Socorro, NM 87801; Vice President, Richard Adee, P.O. Box 368, Bruce, ND 57222; Exec. Secretary, Glenn Gibson, P. O. Box 368, Minco. Okla. 73059.

**AMERICAN HONEY QUEEN — 1983** Mellissa Hart, Tennessee

**APIARY INSPECTORS OF AMERICA** — Pres., James F. Greene, State Apiarist, Dept. of Agr., P.O. Box 27647, Raleigh, NC 27611; Vice Pres., Paul Jackson, State Apiarist, Texas A.M.U., College Station, TX 77843; Sec., Bob Campbell, State Apiarist, New Mexico Dept. of Agr., Box 3-BA, Las Cruces, NM 88003; Treas.,Floyd Hilbig, Nevada Dept. of Agr., P.O. Box 11100, Reno, NV 89510.

**CALIFORNIA HONEY ADVISORY BOARD — Manager — Marilyn Kiser, 522 W. Napa St., Box 265, Sonoma, CA 95476.**

**EASTERN APICULTURAL SOCIETY OF NORTH AMERICA, INC.,** Chm. of Board, John A. Root, P.O. Box 706, Medina, OH 44258; Pres, Matthew Scott, RFD #1, Box 520, Belgrade, ME 04917; 1st Vice Pres., Erasmus Hoch, RD #5, Box 802, Augustus, ME 04330; Second Vice Pres., Chas W. Keller, 107 Chatworth Rd., North Kensington, RI 02852; Secretary-Treasurer Mrs. Liz Rodrigues 157 Five Point Rd, Colts Neck, NJ 07722.

**WESTERN APICULTURAL SOCIETY OF NORTH AMERICA** — President, Don Mayer, IAREC, Washington State U., Box 30, Prosser, WA 99350; Vice Pres., John Edwards, Dept. of Zoology, Univ. of Washington, Seattle, WA 98195; Secretary-Treasurer, Zandy Neese, 11104 58th St., Mira Loma, CA 91752.

**HONEY INDUSTRY COUNCIL OF AMERICA** — Chairman, David Sundberg, Route 3, Fergus Falls, MN 56537; Vice Chairman, David Miller, P.O. Box 15807, Salt Lake City, UT 84115; Sec.-Treas., Dr. Jonathan White, 217 Hillside Dr., Navasota, TX 77868.

**LADIES' AUXILIARY OF ABF** — President, Mrs. Phyllis Taylor, Box 327, Stratford, SD 57474; Vice President, Mrs. Vi Walker, 1135 Riviera Drive, Pasadena, CA 91107; Sec.-Treas, Mrs. Shirley Miller, 162 East 6850 South, Midvale, UT 84047.

**MID-U.S. HONEY PRODUCERS MARKETING ASSOCIATION** — President, Don Smoot, Box 171, Power, MT 59468; Vice President, Dick Ruby, Milnor, ND 58060; Secretary-Treasurer, Glen Wollman, Parker, SD 57053

**NATIONAL HONEY PACKERS & DEALERS ASSOCIATION** — President, T. E. Burleson, Jr., P.O. Box 578, Waxahachie, TX 75166; ; Vice President, DeWayne Barrett, P.O. Box 388, Sioux City, IA 51102; Ex. Sec. J. D. McGinnis, P.O. Box 8, Edgewater, FL 32032.

**PROFESSIONAL APICULTURISTS ASSOCIATION** — President, Malcom T. Sanford; First Vice President, Alan Bolton; Secretary-Treasurer, Eric Mussen.

**SOUTHERN STATES BEEKEEPERS FEDERATION** — President Steve Forest, Rt. 1, Box 135, Moravian Falls, NC 28654; Sec.-Treas. John T. Ambrose, 1403 Varsity Dr., Raleigh,NC 27606.

**THE CANADIAN HONEY COUNCIL** — President, Howard Bryans, Box 387, Alvinston, Ontario, N0N 1A0; Secretary-Treasurer, Fred Rathje, Box 480, Bassano, Alberta, T0J 0B0.

**CANADIAN ASSOCIATION OF PROFESSIONAL APICULTURISTS** — President, John Gruszka, 4th Floor, McIntosh Mall, 800 Central Ave.,Prince Albert, Sask. S6V 6Z2; Vice President, Bernard Levac, 3230 Sicotte, Box 70, St. Hyacinthe, Que.; Sec.-Treas., Lorne Crozier, Horticulture and Biology Services, Nova Scotia, Dept. of Agri., Truro, Nova Scotia.

**NORTH AMERICAN APIOTHERAPY SOCIETY** — Pres., Ann W. Harman, 15621 Aitcheson Lane, Laurel, MD 20707; Vice Pres., Dr. Stan Somerfield, 6295 MacDonald Ave, Montreal H3X 2X3, Quebec, Canada; Secretary—Treasurer, Ernest H. Miner, Jr., 9933 Kelly Rd., Walkersville, MD 21793; Exec. Director, Charles Mraz, Box 127, Middlebury, VT 05753.

**AGRICULTURAL TECHNICAL INSTITUTE — BEEKEEPING** — Wooster, OH 44691

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

## INTERNATIONAL ORGANIZATIONS

**INTERNATIONAL BEE RESEARCH ASSN.** — Hill House, Chalfont St. Peter, Gerrards Cross, Buckinghamshire, England SL0 0NR. (Write for our cataloqs of publications on beekeeping and allied subjects.)

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

# APRIL'S GARDEN CATALOG SECTION

## NEWS NOTES
## California
## Sacramento Area Beekeepers Association

The Sacramento Area Beekeepers Association will sponsor two one day workshops, May 7-8, at American River College, Sacramento, California. Both workshops will meet from 9:00 a.m. to 4:40 p.m.

The workshops will feature Dr. Norman Gary of the University of California, at Davis, a noted bee researcher and professor who frequently provides expert consultant for the television and motion picture industries.

The Queen Bee Workshop will be held Saturday, May 5th. It is organized to give participants a theoretical and practical basis for rearing their own high quality queens in small numbers. Cost for the workshop is $30.00 unless taken in conjunction with the Honey Workshop.

Pre-registration by April 5 is required.

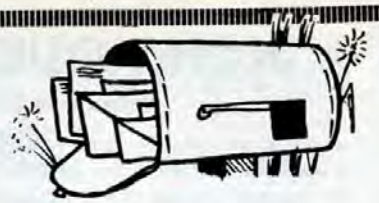
The Honey Seminar will be held Sunday, May 6. Topics will include nectar sources, how honey is made, its chemistry and physical properties, honey processing and pasturizing, grading and marketing. Cost for the class will be $30.00 unless it is taken in conjunction with the Queen Bee Workshop.

Cost for both workshops will be $50.00

Certificates of completion will be awarded.

For information and registration materials contact Chuck Ahlstrom, 6809 Blue Duck, Sacramento, CA 95842. (916) 334-1473.

# Gleanings Mail Box



## Experience With Brood Rearing

**Dear Editor:**

I've had bees for 40 years — I'm 77 — and have often remarked that if I lived to be one thousand I'd never understand bees! The "book" says "Do this and the bees will do that". But I find the bees do something quite differently, usually.

As you probably know, we have just had two weeks of the most severe cold I can remember. For days the temperature never got above zero; down to -18° at night with wind chill indices as much as -50°. Well, the first of this week the temperature moderated, and the last three days it has reached 50°, which, for January, "ain't bad!

Last Tuesday (Jan. 3) my friend who lets me keep my buggies on his farm called to say that one of his cows pushed a hive over, and when he set it up it "seemed very light". So when the temperature got up to 50° Thursday I went out. I had six colonies out there. One was already dead (starvation!). The one the cow had pushed over was indeed very light, and two others could use a little feed. Two had plenty of honey. so I came to town and "cooked up" two 10-pound (of sugar) lots of syrup, and using a ⅔ super and 5 pound pails for feeders, fed the one which had been tipped and another one. Yesterday I cooked up two more 10-pound helpings and gave the pushover hive another shot and the other hive which I thought needed a little more in it's larder a helping.

None of which is what startled me. What "threw me" was the fact that one of the colonies to which I gave one feeding of syrup had brood — mostly sealed — in five frames — a spot as big as my hand or slightly wider. On the three center frames the brood was on both sides of the frame, but on the side of the frame next to the other brood. Most of the brood was sealed, though a little was not; all looked "live" and healthy. I did not keep it out long as I did not wish to chill it. And that ain't all! There were drones walking around among the workers as big as life. I did not happen to see the queen and did not try or want especially to see her.

While I looked at the other four colonies, I did not observe brood in any of them. All, however, had lots of bees. We had an unusually "open" Fall, with no killing frost until after November 10, nearly four weeks late. I suppose this weather stimulated brood rearing and a lot of purposeless flying of the bees and that is one reason they have used so much stores.

I thought this might be of interest because the "book" says brood rearing usually ends by the first of November and then starts perhaps around the first of February on a small scale". But I suppose there has to be a first time for everything.

**Edward C. Verbeke**
**606 West Fifth Street**
**Junction City, KS 66441**

## Questions Concerning Pollination

**Dear Editor:**

At the regular meeting of the Tualatin Valley Beekeepers Assn. Wednesday, January 4th, new officers took over. President for the coming year is George Robins; Vice-president — Daryl Schmidlin; Treasurer — Bob Burgert and Secretary — Carol Burgert.

A report was given by one of our members on the approximate acreage of Crimson Clover and Hairy Vetch grown in Washington County. Also in comparison the amount of registered bee colonies used to pollinate these crops. The figures show there is more than enough crops grown for everyone to harvest a good honey crop. On paper it always looks good! The problem is there are a lot of small fields left unpollinated, while larger fields are over saturated with bee's. Therefore each beekeeper is left with a lesser crop than expected. How does this happen? Simple . . ., Beekeeper #1 has put bees into said field, working with the farmer, (or the grower) for a number of years. This is the field. Beekeeper #2 comes along, sees the lush field and goes not to the grower, but to a neighboring household, whose owner probably works in town and could care less about farming. He has 5 acres that is doing nothing, so when asked if bee's can be set on his property in exchange for honey or possibly money at the end of the year, the town worker says sure . . . Now we cannot forget the beekeeper who lives in this area who knows his bees have a sure nectar flow coming on, so he does not have to move his bees. There is no way we can control the flight of the honey bee. This is why we need to control the number of colonies in the area. Beekeeper #1 knows there are permanent bee yards in the area and places his colonies with that in mind. But when beekeeper #2 places his there with only his own crop in mind, this creates a problem. Instead of 50-75 colonies in the area there is now 150. Maybe everyone will get a bumper crop out of this; but there is a principal involved here that needs attention.

Another situation involving the same principal is the beekeeper who has the pollination contract for the field of clover. He brings in 50 colonies and leaves them for the harvest. We know there is about three weeks between clover and the starting of vetch. When the clover is finished, instead of removing his bee's, they remain there until the vetch across the roadway had finished blooming. It is not unusual to find a trailer of bee's left by a beekeepr from Washington or Idaho, who has had them in the Hood River area. These people know our Washington County is great for nectar flow after the fruit pollination is finished. So they drop their bee's off until the flow is over.

Who is wrong? How can we control this problem? First every beekeeper should talk to the GROWER of a crop, not the neighbor, before he leaves his bees. There should be honor between beekeepers. Look at it in the respect that if this is your field, would you want someone else to put his bee's next to yours? State law requires every hive to have the owners name and phone number on it. If you do not know the farmer or grower, find the name and number of the person who's bees are already there and call him to ask permission. Most likely there is room for both . . . BUT ASK . . . . . .

I know of no law concerning the placing of hives , but even if we had one, who would inforce it? Our bee inspectors are agriculture inspectors first. The state alredy spends more money on bee inspections than comes in from beekeepers. They can-

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not increase their service to us without charging additional fees. Therefore bees are second. The fruit, nuts and other farm crops come first. But what about us? Isn't HONEY a crop? Without bee's to pollinate, where wold the fruit, nuts and other crops be? What can be done about this?

Can the OSBA set a format in which all beekeepers have to follow? Consider the idea of a permission slip to be signed between the beekeeper and the party which gives permission (does that person have the right to giver permission?) This does not have to be a contract, just a permission slip to place your bees on someones property for a particular crop. This could be checked by an inspector or better yet the beekeeper on whose rights you are infringing on. A penalty or a fine could be imposed. If you have permission for clover then your bee's had best not be there when the vetch comes on unless the person giving permission has vetch also for your bees. If the beekeepers themselves cannot honor each other, then the state is going to have to step in and take control. Let's avoid if possible the need to have registered sights. This too could be a hassle. Let's work together for better beekeeping.....

**Karalee Charriere**
**Rt. 1, Box 197-13**
**Banks, Oregon 97106**

## HIVE PRODUCTS: PROMOTION

**Dear Editor:**

Recently, the West Texas area was hit with mass confusion over the consumption of bee-made products.

The confusion was aroused by a motivational speaker, employed by a supply company from Anaheim, California. She promoted bee pollen and propolis as "...not a drug or supplement," but a "complete food containing every nutrient needed by the human body." She was representing her company's products only.

The California speaker, Ms. Alls, credits her recovery of lukemia to the intake of bee pollen.

She said bee pollen has been beneficial to every member of her family, according to a report by the Lubbock Avalanche Journal.

She also claims pollen is "...good for arthritis" and "...helps to build immunities to all allergies."

Propolis, another bee-made product taken by the motivator "...is a major breakthrough in the quest for an all-natural medicine that helps battle the ravages of the virus or soothes and heals stomach ulcers," said Ms. Alls.

As beekeepers, most do agree with the use of pollen and many sell the product for consumption.

The confusion was aroused by the statment that pollen can contain pesticides. Also, Ms. Alls, being interviewed by a predominant broadcaster, denounced the value of honey. The curiosity of pesticides in honey was also a major problem.

According to a honey supplier listed in the yellow pages, the public was confused, this being determined by the number of phone calls concerned with the issue.

However, without realizing, Ms. Alls caused honey and pollen sales as well as beekeeping supplies to rise rapidly in the area.

The beekeepers should be made aware of this situation in the event Ms. Alls continues to travel throughout the country.

One other point was interesting. Ms. Alls claims that "...her position with a motivational firm brings her $1500.00 an hour speaking fees."

Comparing what she does to what our queens do, no one should take the Honey Queens work for granted. they promote products of the hive with documented and researched proof. When the queens leave from a promotion, little or no confusion is present. They eagerly do their promotions from far lesser sums. The Honey Queens are bricks of gold to the industry.

**Deon Zumwalt**
**P.O. Box 2247**
**Lubbock, TX 79408**

## TWO LETTERS ABOUT THE BEE LOUSE

### Two Letters About The Bee Louse

**Dear Editor:**

In the February issue of *Gleanings in Bee Culture*, page 83, Mr. Charles Mraz mentioned "Braula coeca mite". I should like to point out that *Braula coeca* commonly known as the **bee louse** is not a mite (*Acari*). This insect pest of honey bees is a wingless fly (*Diptera*) with three pairs of legs, reduced eyes and antenna. Further characterization and SEM photos of *B. coeca* and mites of honey bees are given in American Bee Journal, Vol. 123, pp. 812-813, 819, by M. Delfinado-Baker & W. Styer (1983).

**M. Delfinado-Baker**
**Beltsville, MD 20705**

**Dear Editor:**

In the February 1984 issue of *Gleanings*, Charles Mraz in Siftings repeatedly refers to *Braula coeca* as a mite. Your readers should be informed that the bee louse *Braula coeca* is **not** a mite, or a louse as the name implies. *B. coeca* is an insect classified in the order Dipter, flies, in the family Braulidae. The bee louse is wingless and lacks haulters that most flies have.

In the November 1983 issue of *Gleanings* Roger Morse asks "Why should Maryland be the center of the bee louse infestation in the United States?" I do not think Maryland is the center for the U.S. population of *B. coeca.* Argo (1926), Phillips (1925) and myself who wrote extensively about the bee louse and surveyed for it, all happened to reside in Maryland. I feel that the bee louse is widely distributed in at least all of the Eastern United States. Adults are rarely seen (even in Maryland) however, tunnels produced by larvae and usually overlooked are present in many colonies. Since no one has really looked for the bee louse it is considered not present or very rare in most states — an incorrect assumption.

**I. Barton Smith, Jr.**
**State Apiary Inspector**
**Annapolis, MD 21401**

## Comb Fumigation

**Dear Editor:**

May I quote an excerpt from a popular Health book. "Often empty combs are fumigated with moth balls (P.D.B.) or methyl bromide, whose residues contaminate the honey as it is produced".

The people who will read that book, I would guess, make up about 65 percent of our customers. I do not wish to argue fact or fiction here.

Not liking to eat or smell moth balls myself, I made a frame 16" by 20" of ¼" by 1½" lumber. Then laid on screen door screen and tacked on ¼" by ¾" pieces of crossbars. You may apply P.D.B.s with

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a spoon, handfull or a scoop shovel, whatever you wish and place between one or fifty supers depending on your location.

If moth balls are used (carefully) there will be a minimum of residue falling into upturned cells and if aired for a few days will be acceptable to bees. It is very easy to retrieve P.D.B.s, take frames and pour them back into sealed container and they will keep much longer.

**Clif Osterman**
**Rt. 3, Box 103**
**Goodland, KS 67735**

## Positive Comments About

### The Slatted Rack

**Dear Editor'**

I must tell you, I'm a believer in the slatted rack, I have nine beehives with this rack installed on the deepside (topside) of the bottom board. Naturally, this deepens the bottom board.

I first started out five years ago with two beehives, that were a few years old without any slatted racks. These brood combs were "eatout" from the bottoms and some ends of their frames; naturally I wondered why.

Now, the "old time beekeeper" (kept bees over 60 years) that helped teach me, said "use this slatted rack." This I did and have been pleased for four years.

The first year, I removed "it" in the fall and re-installed it in the following spring. Since that time, I leave it on all year; here in the southeast corner of Tennessee. So far, so good.

The new brood and other foundation have been completely drawn out in their frames and stayed that way.

I have noticed this rack full of bees when the hives were opened in spring through fall. Also, in the fall I have seen bees clustered and extending below the slats.

Last year I used queen excluders on all these hives, including two hives that were "Double Queened". I didn't notice any difference in the travel in and out of the hives, however, the bees did store more than I imagined; for late in spring much forage was frozen out and I didn't notice any flow for two weeks after. I also observed for a month after this, the bees were very

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"cross" and naturally I "felt this many times. However, after surplus honey was being stored these bees were quiet and much more friendly.

**Voron Baughan**
**2321 David Lane**
**Chattanooga, TN 37421**

## The Future Of American Beekeepering

**Dear Editor:**

After 1984 the best the American Honey Industry can expect from the U.S. Government is a support price and loan program governed by the Secretary of Agriculture. He will set the price of honey, and it will be at the World Market Price. There will be no tariff; there will be no quota; there will be no 60 percent of parity. Also, this talk about a disaster for the United States Agriculture if the commercial beekeeper is wiped out is nonsense. Supply and demand, and the hobbyist and the part-time beekeeper will take care of all pollination requirements.

As it now stands, those who will survive are:

1. The California pollinator/honey producers.
2. The part-timer and hobbyist with local sales.
3. The producers of special honey, such as orange.
4. The East Coast pollinator/honey producer.
5. The commerical honey producer in states with large urban populations and who can capitalize on state pride and patriotism.
6. The efficient Sioux member.
7. The Mexican beekeeper.

Those who won't make it are:

1. All western and midwestern beekeepers with the exception of California.
2. Almost all Canadian beekeepers, certainly those far from urban centers.
3. Inefficient Argentine beekeepers.

The United States beekeepers only chance, it seems to me is to:

1. Differentiate our honey from imported honey. If we can do that, when the national resentment towards increasing imports becomes much stronger, as it inevitably will, perhaps we can appeal to our countrymens' patriotism to sell our honey.

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# Bee Talk

by DR. RICHARD TAYLOR

Route 3
Trumansburg, N.Y. 14886

I've been philosophizing and woolgathering all winter, and some of my thoughts have found their way into these pages, for whatever they may be worth. Now it's time to start thinking again about the practical problems of beekeeping. Today was our first balmy one in months, the air was filled with bees long confined, and I realized that I've got to get going preparing for another season.

There seems to be a lot of interest in intensive beekeeping and, in particular, in the shook swarm system of getting comb honey. Whenever I talk to beekeeping associations the questions sooner or later turn to shook swarming. So I'm going to revive that topic for the next few installments of these bee talks. I've written on the subject elsewhere, and I don't want to just repeat what I have already said. So for the past year or so I have been pestering other beekeepers who have tried the system, to pick up new angles. I've learned quite a bit this way, which I'm going to pass along. Meanwhile, any other readers who have something to tell me about shook swarming are urged to write and share their ideas.

Let's start at the beginning, to get the basic idea before us. That beginning consists of noting the power of natural swarms to build comb and store honey very fast.

If you hive a large natural swarm on foundation you will be astonished at how fast the bees draw out the foundation and begin storing honey. A new swarm is a powerhouse of energy and, with little brood to feed at first, a lot of honey is gathered, provided there is a honey flow in progress.

But now stop and think of this: If you happen to see a large swarm come pouring out of one of your hives, and you then move that hive to another part of your apiary, replacng it with an empty hive fitted either with foundation or drawn combs, and then, having done that, hive that large swarm right there, at its original stand but in a new hive, you have got more than just a powerhouse colony. You've got a super colony. Because not only do you have the swarm, you have it augmented by the vast throng of field bees which did not join the swarm when it came out, but which now join it at their regular stand. And this super colony has no brood to tend. It has little to do except gather honey for you, and plenty of bees for the task. The energy and zeal of the swarm is infused into the whole colony. So you need to add two or, more likely, three supers right away, over an excluder, and the bees will go right to work in them. Nor do you need to worry about either this colony or the parent colony casting another swarm; this one has no brood, and the other no field bees, at least for quite awhile.

The parent colony which you moved off to one side, meanwhile, will be temporarily weakened, having lost not only the swarm but its field force as well. So you had better reduce the entrance for a week or so, to make sure it doesn't get robbed out. It will get back to normal strength before long, however, being full of brood, and it will be headed by a nice young queen too. It might even give you a super of honey, and in any case, it will be one of your very best honey producers the next year.

The procedure just described is called "Padgening," a misspelling derived from the name J.W. Pagden, the British beekeeper who first describd it over a hundred years ago. It is one of the simplest, cleverest and most effective manipulations in apiculture.

Now you can, if you want a super colossal colony, go one step further and shake the bees from the combs of the parent colony in front of this new hive on the old stand, making sure you do not shake the virgin queen off too. The bees will march in and join the rest. Do one comb at a time and shake either some, most, or all of the bees off, depending on how thoroughly you want to deplete the parent colony of bees. If you shake most or all the bees off, then you're going to have to distribute those combs of brood to other colonies to tend. And of course you run a danger here of adding one or more newly hatched virgin queens to the colony, which is no good, for that can precipitate a swarm, that same day or the next, and all your work will have been for naught.

The only trouble with the procedure just described is that you've got to be on hand to see which hive the swarm came from — or else guess, in case you arrive at the apiary to find the swarm already clustered. And chances are you will guess wrong.

So the answer is to create your own swarms, at times of your own choosing. To go into this, I've got to repeat what I have written elsewhere, but I'll try to do it as briefly as possible, and then, next time, go on to some of the modifications that other beekeepers have found successful.

To create a shook swarm colony, proceed as follows:

Select a **strong** colony, and move it a couple of feet off to one side. In its place, on its original stand, set a bottom board, a shallow super fitted with nine (9) frames of foundation, a queen excluder and, on top all that, two or perhaps three comb honey supers, and an inner and outer cover. Now remove the combs from the original colony, one at a time, and shake, with a single quick downward motion, most of the bees from each comb onto a cloth in front of the new shallow hive, watching for the queen. When you find her, snip off about half of one of her wings, or, if you don't want to do that, or in case you don't ever see her, then wait until you are pretty sure she has entered the new hive with the rest of the bees and then slip a queen excluder onto the bottom board, under the hive, to keep her inside.

When most—may two-thirds or so — of the bees have been shaken from the combs in front of the new shallow hive, put the parent hive back together and set it **behind** the new shallow hive, facing the opposite direction, and introduce a new queen. Don't leave them to raise their own queen, unless some good, undamaged queen cells were left on the combs. They are sure to accept a new queen, because all the flying bees join the new colony on their original stand, leaving only young, gentle bees behind.

If you slipped a queen excluder under the hive, to keep the queen in, then be sure to remove it in a day or two. If you don't clip the queen, or put an excluder under the shallow hive, then the bees are apt to all swarm out and take off, either the first day or the next; but once they've been there a couple of nights they always stay put.

The rest is simple. You harvest the comb honey, perhaps adding another super or two in the meantime, then replace the shallow hive with the original parent hive, turned around to face in its original direction, and put the shallow hive, now filled with brood, on top of it. Remove the queen in that shallow hive if you find her, but if not, then the bees will dispose of one of the two queens resulting from this reuniting.

That final step, consisting of reuniting the

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# Siftings

**By CHARLES MRAZ**
**Middlebury, Vermont 05753-0127**

It is time the beekeepers in the U.S. take notice of a serious problem in Mexico. Exept for the Yucatan Peninusula, almost all of Mexico appears to be infested with the Acarine mite. California, New Mexico, Arizona and Texas border northern Mexico and the Acarine mite will soon be found in those states. When the Acarine mite does arrive, movement of bees in these states will be restricted. Package bees and queens cannot be shipped to northern beekeepers. Northern beekeepers who move bees south for increase will no longer be able to move them north again, for the honey crop.

For the commercial beekeeper it is a serious problem. I have visited and worked with many beekeepers in many parts of Mexico over the past 25 years. Recently, I visited QuintanaRoo, Cordoba, Puebla and Morelos areas inspecting many colonies of bees, and discussing the Acarine problem with many beekeepers. Of all the colonies of bees inspected, there was no visible sign of Acarine Disease such as disjointed wings and dying bees that occurs in the last stages of the disease. In some areas heavy losses of bees have occured.

Acarine Disease started more than 60 years ago, when in 1921-22, heavy losses of bees occured in England on the Isle of Wight and was then called "Isle of Wight" Disease. Investigation revealed the disease was an infestation of internal mites in the trachea of the native British Brown Bees. Because of heavy losses of bees, other races of bees, such as Italians, Carniolans and Caucasians were imported, and gradually replaced the old Native British Bees and Acarine Disease gradually disappeared.

Somewhat the same thing happened in the U.S. in the early part of this century. the first bees imported into the U.S. were the so called, "German Black Bees" from various parts of Europe. For more than 200 years it was the main bee found in the U.S. In the early 1900's, especially in New York State areas, European Foul Brood caused heavy losses of bees. It was soon found that the Italian bee of that time was highly resistant to EFB. Rather than burn the colonies, requeening cleared up the problem. This, more than any other reason is responsible for the disappearance of the German Black Bee in the U.S. In the same way, Acarine Disease was responsible for the elimination of the Native British Bee, in the British Isles.

Almost all the bees in Mexico today are of the Italian race of bees, but apparently they are susceptable to a large degree to the Acarine mite, at the present time. There does however, seem to be a great variation of infestation of these bees to Acarine. Some colonies will have a high rate of infestation and others will show no infection at all. There can be no question that there is a resistance of some bees to this problem. If not, bees would have perished ages ago.

Chemicals, fumigants of various kinds are being tried in Mexico to control Acarine, but it is not satisfactory. It involves much labor and expense and control is only temporary.

For every insect pest on this earth, there is another insect, disease or other biological control. What is a possible biological control, or "physiological;; resistance of bees to the Acarine mite? On this visit to Mexico I visited a young biologist beekeeper, Francisco Reyes of Miel Real, Cordoba, Ver. Mexico. Francisco has a large collection of literature on Acarine Disease from all over the world. He has visited Colombia and Costa Rica to see the Africanized bees first hand. He is fluent in Spanish, French, Italian and English, and can read all the literature in these languages. He regrets he cannot read the Chinese and Russian literature.

On this subject of biological control, Francisco gave us some interesting information that in France, research has been done on a fungus that apparently controls the Acarine mite. This fungus enters the trachea of the bees, attacks and kills the mite with no harm to the bee itself.

If true, and the fungus can be propogated, a solution to the Acarine mite would be quite simple. A solution with the fungus could be sprayed on a hive of bees and the fungus would spread itself to the trachea and kill the mites. It perhaps would be self perpetuating so that no further treatment would be necessary. Do just certain "resistant" bees perpetuate this fungus? Or will any strain of bees develop it to control the mite? Can a viable, specific fungus for the Acarine mite be propagated?

This is a fascinating development for the control of the mite problem. Could not also a fungus be found or developed to control the Varroa mite? From what I have read, the varroa mite mates and breeds within the cell of a larvae of the honey bee. This means that considerable "inbreeding" takes place. This in turn would make it especially susceptable to disease such as fungus, bacterial or virus, if such a pathogenic agent could be found. There can be no question that such an agent exists, we just have to look for it. I am sure Mother Nature has the answer.

This Acarine Disease problem is just as important to the beekeepers in the U.S. as to beekeepers in Mexico. I believe research for the control of this problem calls for active cooperation by the U.S. Department of Agriculture with Mexico.We have as much to gain as they do. The Acarine mite is already all over Mexico and it is logical for the U.S. to help finance research to control the problem now, in Mexico where it is already established. We must not wait unitl it suddenly appears in the U.S. For all we know, it may already be in Texas as it is difficult to detect in its early stages.

We should try to solve the Acarine problem now as there are two more serious problems creeping up on us. The Africanized bees and the Varroa mite. We cannot afford to have all three hit us all at once.

At Miel Carlota, in Cuernavaca, we had a meeting with Dr. Antonio Zozaya, the head of beekeeping for Mexico, on the Acarine and Africanized bee problems. The advance of the African bees up through Central America seems to progress exactly as predicted by Orley Taylor. They are now in Costa Rica and they will enter Mexico on the Pacific Coast from Guatmala, the later part of 1985. By 1987, they will be in almost all of Mexico, and reach the U.S. by 1989.

About the only way to control the Africanized bees is to constantly requeen with European queens much as the beekeepers have been doing for many years in Israel to control the Syrian bees, that are just about as bad and the Africans.

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# THE POLLINATION STORY OF THE RED DELICIOUS APPLE

**Roger A. Morse**
**Department of Entomology**
**Cornell University**
**Ithica, NY 14853**

**These colonies on a hive stand will not have their entrances blocked or shaded by the rapidly growing grass. A hive stand also helps to keep the bottom board dry and the colony needs fewer bees to keep the hive warm.**

The Delicious apple, also known as Red Delicious to differentiate it from Yellow Delicious, is the most widely planted apple variety in the United States today. However, yields of this variety, which was developed in upstate New York in 1872, have always been poor. In fact, some growers have reportedly been so disenchanted with the apple that they removed it from their orchards.

Most apple varieties will not set fruit unless they receive pollen from a different variety. Pollen from a flower on the same tree, or from an adjacent tree of the same variety, will not grow and fertilize an ovary. Thus, apple growers do not plant solid blocks of one variety. In old fashioned plantings, where 27 large trees were usually planted per acre, every third tree in every third row (one tree in nine) was a pollenizer. Hedgerows are popular today; usually some or all of the trees in every third row are pollenizers. Planting in this manner assures an adequate pollen supply.

Many factors have been blamed for the poor yields of Delicious, but it now appears that the peculiar structure of the Delicious apple blossom may be the primary cause. Honeybees visting Delicious and collecting nectar do not climb over the sexual parts of the flowers as they do on other apple varieties. As a result, most bees visiting the flowers do not pollinate them. Dr. Willard Robinson, then a graduate at Cornell University, discovered the difference in spring, 1978, and spent the rest of 1978 and 1979 studying the problem in depth.

As a result of Robinson's studies, our recommendations to growers of Delicious apples are to use more colonies per acre and to pay special attention to the normal precaution of selecting the best sites within the orchard for honeybees.

Robinson began his investigations of the Delicious problem in a southern Pennsylvania orchard. When the bloom was finished, he drove quickly to Ithica, in the Southern tier of New York State, where he made further observations. When the Ithica bloom was finished, Robinson drove to Novia Scotia to continue his studies. Thus, in one year Robinson did three season's work. This research would have been impossible without a generous gift from New York State beekeeper Harold Merrell, which was used to purchase a new vehicle that made the trip both possible and safe.

Robinsin discovered that the flower structure of Delicious apples differs from that of most other apple varieties. The 20 stamens, which are found in a circle around the five female parts in the nectary, have gaps at their bases. Honeybees learn to collect nectar through these gaps while standing on the flower petals, and thus avoid contact with the flowers' sexual parts. In most apple varieties the honeybee must probe with her mouthparts between the male and female flower parts and in the process must rub her body across them, thus transferring pollen.

After examining 77 Delicious sports that are maintained in the Cornell University Agricultural Experiment Station in Geneva, Robinson found that all showed this characteristic Delicious structure. Delicious sports cannot be used to pollinate each other. A survey of 40 other apple varieties revealed that Northern Spy and, perhaps, Wayne have similar flower morphology.

Worker honeybees visiting Delicious apple flowers were divided into three categories: top workers, side workers, and spreaders. Top workers and spreaders contacted a female part of the flower on 94.6 per cent and 71.3 per cent of their respective visits, while side workers touched a stigma on only 4.2 per cent of their visits, usually accidently.

In subsequent studies, it was discovered that bees learned to side work apples, and that they preferred to do this. In fact, if bees moved from a Delicious apple tree to one of another variety and found the second

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tree to be different, they left it and returned to a Delicious tree. Honeybees learn this habit more quickly in orchards containing predominantly Delicious trees.

In 1982, Eric Kuhn and Dr. John T. Ambrose of North Carolina State University reported that Yellow Delicious apples also had flowers that were slightly different from others. The male parts of the Yellow Delicious form a compact ring around the nectary, but they are short and flexible. Honeybees that learn to side work Red Delicious will approach a Yellow Delicious in much the same way and may successfully obtain nectar. Because of this, it may sometimes be difficult to obtain a good set of Yellow Delicious when the two varieties are adjacent.

## RECOMMENDATIONS

For many years, the recommendations for using honeybees in apple orchards have been unchanged. In large orchards, one colony per acre is the rule. Small orchards surrounded by fields and hedgerows may need fewer bees because of the presence of solitary and wild bees. The general guidelines for the placement of colonies in an orchard are listed below.

1. Colonies should be placed where they will encourage foraging both early and late in the day. Hives should never be placed under overhanging limbs where they will be shaded. Most apple growers place their colonies in groups of three to five to take advantage of the orchard's best locations. Placing colonies on eastern or southern slopes will increase the amount of sunlight received. The trees in most orchards protect hives from winds that may discourage flight.

2. Colonies should be placed on pallets or somehow raised off the ground. This helps keep the hive bottoms dry; hives that are even slightly wet will have more difficulty keeping the brood nest warm, thus requiring more bees to remain in the hive. Second, grass grows more rapidly in the spring, and it can both shade a hive and slow or block flight from an entrance.

3. Dandelions, yellow rocket and other flowers that may compete with apples for honeybees should be removed by mowing or using weeds killers. Apple nectar usually contains about 40 per cent solids (mostly sugar), but so do several plants in flower at the same time. The competition among these flowers can be keen. Where flowering weed plants are abundant in a blooming apple orchard, extra colonies should be used.

4. Colonies used for apple pollination should contain brood in about six standard full-depth frames. In a bee hive, the brood nest is shaped like a basketball or football. The two outside frames of the brood nest that spreads across six frames are only partially full of brood. We estimate that a colony with brood in six frames will contain about 30,000 bees, a good population for a two-story colony at apple blossom time. Some brood should be removed from colonies that have brood in more than six frames. Otherwise the colonies may be congested and could swarm, a process growers and beekeepers should avoid. Research has shown that colonies actively rearing brood require more pollen, and this encourages foraging.

**Dandelions produce a nectar that contains about the same amount of sugar as does apple nectar. Dandelion pollen is also highly attractive to bees. These weeds should be removed so that bees will work the apples.**

5. Colonies rearing brood use large quantities of water to dilute the honey fed to the brood. They may obtain water from dew, but too often get it from wheel ruts in muddy spots of the orchard, which may contain some pesticide. Using such water is probably a major cause of honeybee losses in apple orchards. Providing fresh, clean water is not always practical, but it will help prevent honeybee losses.

These guidelines are especially important for Red Delicious pollination. Bees with no field experience working apples make good pollinators. However, honeybees learn quickly and growers and beekeepers must be aware of the problem.

Apples are a major crop across the northern United States and in Canada. Long ago it was established that a well-rounded, normally shaped apple had a full, or nearly full, complement of 10 seeds. Usually, six to eight seeds are enough to produce a good fruit, although large apples are likely to have more seeds. Lopsided apples will usually have only a few seeds. Pollination is a key to successful apple culture.


**ABC AND XYZ OF BEE CULTURE, 39th EDITION. Medina, Ohio: The A.I. Root Co., 1983. PP 712, plus preface and index. $13.80.**

**This most famous of bee encycopedias has been kept in print, and continually revised, since 1877. Because of its great popularity over the years, the older editions are still fairly easy to find and are eagerly sought out as collector's items, becoming more and more valuable with the passage of time. My own latest count disclosed 52 copies in my library. A few editions are still missing from my collection and others are, of course, dupliacted. The very oldest and most treasured are protected in plastic wrappers. One of the antique editions of this work has been**

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republished in fascmille and many have been extensively translated.

Lawrence Goltz, who was for many years until recently, editor of this magazine, has worked hard to bring this latest edition up to date. There are many new entries and extensive revisions of some older entries. African bees are finally given proper treatment, and the section on comb honey is revised. There are new articles on hives, extractors, excluders and honey combs. The section on frames has been brought up to date, with good descriptions of the four frames now considered standard. An excellent section on commercial queen rearing has been included.

Mr. Goltz has added a section on introducing queens by means of a nucleus, thereby responding to a widespread need for information on this troublesome aspect of beekeeping. The nucleus method is probably the only one that is virtually foolproof, and many beginning beekeepers, who have suffered setbacks with other methods will welcome this addition.

A section on what is referred to as "the Cobana System" forming part of the extensive discussion of comb honey and written some time ago by this revieweer, unfortunately fails to take account of the fact that circular section equipment is now available under names other than Cobana, most notably the Ross Round name. Indeed, I believe that with the burgeoning popularity of circular sections, much more space should be given to them, and less space to rectangualr, square sections, which seem to be fading into obsolescence.

The ABC AND XYZ OF BEE CULTURE is the only encyclopedia known to me whose older editions increase in value with time. That is probably because they possess the charm of the craft itself.

Richard Taylor

IT PAYS TO KNOW

# How to . . .

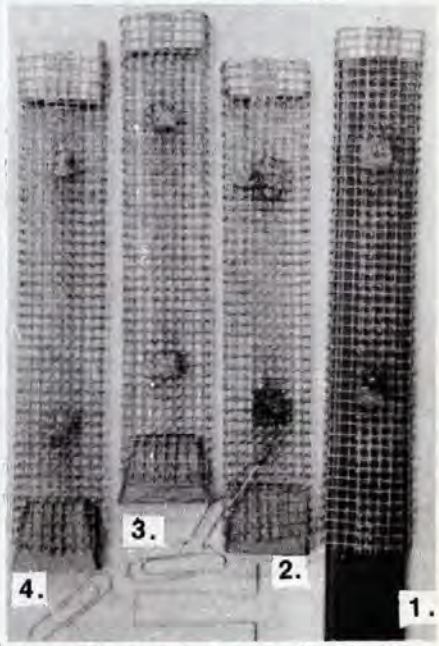
By P.F. THURBER
5522 127th Ave. N.E.
Kirkland, WA 98033

## Thurber Long Cages — To Make And To Use

For at least ten years I requeened with the standard individual queen shipping cage or to be more precise they are named Benton cages. I also used them for temporary storage of queens. Frankly the longer I used them the less I liked them not only for introduction but also for storage. Checking around locally with the reportedly more qualified beekeepers I found everyone was using the Benton cages, but one chap did mention that he had heard of or had read of better introduction cages, and mentioned the name of man named Chantry. That was a clue and I began chasing down Chantry. Unfortunately the gentleman was dead, but I found information that Chantry made introduction cages with two entrances. Later I discovered that Chantry's twin entrance cages were apparently not original design. Anyway the way they worked was this—both entrances were in effect tunnels. One tunnel was short; the other was much longer. The short tunnel had a queen excluder across it, and both were filled with queen candy. When installed in a queenless hive, the bees quickly, maybe in a as short a time as a day, would eat through the short tunnel and go through the excluder to feed and groom the caged queen. When the bee leaves she goes through the hives and spreads the queen's pheromones (odor) which substantially aids acceptance. Then a day or two later the candy in the other tunnel is eaten which releases the queen. As I kept digging and asking, I found maybe half a dozen two entrance designs of which two were commercially made. One, possibly the better, was the "Ideal cage" patented December 13, 1927 but manufacture was stopped during the depression. That was too bad for it is really a fabulous cage and at last I knew the Bee Lab personnel at the University of California Davis hoarded their supply but still used them for queen introduction. Later I stumbled onto a small supply and used them for maybe five years very happily. The other Chantry type cage was made by the Wrex Manufacturing Co. of Chico, California. It was all plastic, easy to fill with candy, easy to put the queen in, etc., so I do not know why it was not widely accepted. Maybe five years ago I checked in at Wrex. They still have the molds, but are not interested in small orders. Ask them for prices on 100,000 cages, put up a deposit, and I suspect they would be back in production.

Despite the fact I had enough Ideal cages for all my foreseeable needs I still wanted a double purpose cage and neither the Ideal nor the Wrex, in my opinion, filled the bill so I kept my mind open and kept reading. A possible cage was the Miller Penny cage. It sure was cheap as well as easy and quick to make. What Dr. C.C. Miller did was take a piece of galvanized after weaving eight wires to the inch hardware cloth (screening) and cut pieces about six inches long and two and three quarters of an inch wide which he wrapped around a piece of ¾ inch dowelling to make a tube six inches long. While holding this, I presume, with wire around the piece of dowell, he soldered the hardware cloth two or three places so it would remain a tube. Finally he cut a short piece of dowell and shoved it in one end and tacked it in place. For the other end he took another piece of ¾ inch dowelling about 1½ inches long and drilled a $^3/_8$ hole in it lengthwise. After sanding the hole smooth, I suppose he dipped it in molten paraffin wax or beeswax so that later when he filled the hole with queen candy ("Goode Candy") the wood did not draw moisture out of the candy and harden it. To use he put a queen in the tube and shoved in the plug with the candy in place. This cage was placed in a slot cut just above the bottom bar of a frame of brood. Since the slot was cut undersize the cage stayed in place till the bees ate out the candy and released the queen. To store a queen all one would do is use a solid plug instead of a candy-filled plug. I tried the Miller cage and they worked OK. However, I felt the Miller Penny cage was better perhaps for introduction than for storing spare queens.

Despite the fact the Miller cage was inexpensive and simple to make I really was not enchanted with it. It had a major disadvantage in that in use it was unhandy. One had to cut the slot in the honeycomb. That meant drone cells I did not need, and in addition the cage could not be quickly used. Frames had to be removed to put the cage in or to take it out, etc. So I kept looking and thinking. Finally I guess in 1970 or 71 I was looking at a Thorne's Bee Supply catalogue I had obtained from England. In it was a Worth cage. The Worth cage seemed simple and cheap and since it was hung vertically between two honey combs presumeably the cage could be inserted or removed from a hive with minimal disturbance to the hive. It seemed that if the cage say was hung between two frames of the lower hive body all one would have to do would be tilt the upper super or supers forward or backward, grab the cage and slide it out. Great, I would make some!




**Long Cages: 1.) cage in steel form / 2.)completed with top plug and suspension wire (from paper clips) / 3.)completed cage less wire after washing off solder flux / 4.)optional cage -- plugs in both ends.**

After I had made several of what I thought were replicas of Worth cages by bending $^1/_8$ inch hardware cloth around a piece of one inch by $^3/_8$ inch hard steel strap, soldering the seam at two places, and making plugs for each end, I started using them. However, first I simplified the way to hang the cages, and then figure out how to do away with candy as a release medium. Actually I thought I had a good cage, and used them for a year or two with what I though was acceptable success. The acceptable success factor still gnawed at me. Good queens even in 1973-74 cost money, and losing one was not only

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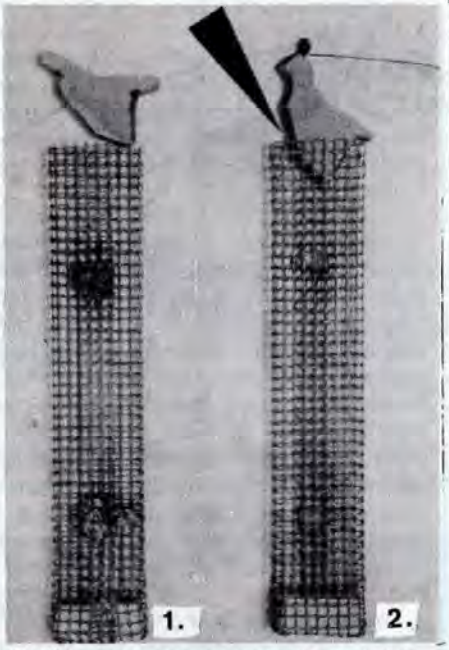
an expense but a nuisance. I would have to order another one, etc., so I thought some more about those few losses. What I figured out basically was this. If one runs 10 frames in each brood nest super — and I do because I think our climate makes it desireable — then a cage built around a piece of wood or metal $^{3}/_{8}$ of an inch thick is difficult to use unless one scrapes the Hoffman ears of each frame to gain space between the frames one wishes to insert a suspendable cage. You see when you add the thickness of a layer of hardware cloth on each side of the thickness of a $^{3}/_{8}$ piece of wood or metal, you end up with a cage that is a little over $^{7}/_{16}$ of an inch thick. Is this significant? I thought so because I was getting a few queen losses when I pushed down the cages between two frames. In one case a queen (who hangs onto the inside of the cage) had a foot chopped off. (Bees do have feet I guess, heck, they must have if they have legs.) In another case I was pretty sure that I jammed a foot or leg between a wire or wires of the cage and an adjacent top bar in such a way that the queen could not be fed. Crippled queens and starved- to-death queens I did not need, obviously. So I started looking for five sixteenths by one inch bar stock. No luck, more no luck, and still no luck so I took a piece of aluminum (because I was too cheap to have piece of $^{3}/_{8}$ stocked milled down to $^{5}/_{16}$) and ground it to a pretty close $^{5}/_{16}$ depth. I made several cages around the $^{5}/_{16}$ stock, and then went out to the hives and looked for the biggest fattest queens I could find. I tried several in the $^{5}/_{16}$ by one cages. Queens could all scurry around fine. OK, that solved that. Then a stroke of luck. Would you believe that one day during the next year I tottered into a metal salvage yard and found a broken adjustable clamp like the pipe clamps you buy everywhere and the bar on which one of the fingers of the clamp was $^{5}/_{16}$ by one. For a buck or two I had a piece of the desired, long sought for, stock about a yard long! I cut it into nine inch hunks. Kept one and gave the others to friends who were also making the long cages.

A year or so later I met Dr. Gordon Waller then and now at the Tucson Bee Lab, and if I remember, either gave him one of the long cages I had on display in the gadget show of that Northwest Bee School at WSU, Pullman, Washington, or told him about them. Now, I think (and I maybe wrong) that Dr. Waller keeps bees with nine frames to a brood box which is OK down south, but not OK, I think, up here. He had some cages made around $^{3}/_{8}$ inch stock and at least for a while used them and then had an article about them in a popular press bee publication as I remember. Apparently with nine frames in a ten frame box, cages bent around $^{3}/_{8}$ stock are no problem. He also came up with an ingenious idea — instead of using queen candy or the paper I was using to release the queens, he found a marshmallow stuffed into the entrance to the cage worked fine. Frankly I never tried that. Over the screaming protests my wife bought me a package of marshmallows, but before I got to use them I ate the whole package. The wife bought another package and threatened me with bodily harm if I ate them so I put them behind the seat of my pickup. Later when I decided to use some, I found they were very stale and had the consistency of a rubber heel. The heck with them. I used newspaper instead, and though they were really not fit to eat, I ate them anyway.




**Pull to release queen plug. 1.) top to show shape of plug / 2.) partial pull will release queen (arrow); thread used in photo so it will show up. Use monofilament fishing line: bees can't chew through it.**

How do I use newspaper as a release? That is easy. Either with scissors or just by folding and tearing I get a piece of newspaper roughly an inch and a half wide or maybe slightly narrower. Then I fold the paper so I have either four and better six layers of newsprint folded into a piece with the dimensions of one and a half by one inch. After I put the queen in, I place the paper over the end of the cage and bend the paper over the ends and sides of the cage. This I fasten with a turn or two of three quarter inch masking tape. A rubber band can be used if you have a small one because you do no want to thicken the cage appreciably.

Now you know how bees make a big project out of removing the newspaper from the end of the cage if the cage is placed so bees are both above and below it at all times. I do not think they realize eating out the paper will release the queen but in fact it does in 3 or 4 days.

Let me also interject here that initially I made the long cages (which I still then erroneously called Worth cages) nine inches long. As I worked with them over they years I shortened the cages by making most of them of hardware cloth cut to three inches wide and six inches long. With the shorter cage I could requeen in a Western ($6^{5}/_{8}$") super or I could suspend the cage down in the honeycombs instead of from the top bars of a standard deep super to insure that bees would surround the cage and the paper covered top.

I also had one other minor problem. Just once somehow when I had a queen I wanted to store instead of release, I had the wire (from a paper clip is ideal) placed too close to the wooden trapezoid plug. The queen tried to walk a circle in the space between the plug and the wire and got a wing or wings caught so she could not back out. She starved. Merely lowering the wire hanger cured that. I also had a queen accidentally released, and killed because the plug stuck up too far above the top bar. That is easy to fix. All you do is make the wires longer before you make the two final bends. That drops the cage lower.

Before I take the photos to accompany this article, I think I should add that Doug McCutcheon, Provincial Apiarist for British Columbia, and my bee buddies, Bill Rahr and Henri Peter-Contesse, make their cages with a removable plug at the bottom of the cage and, I think, often remove that plug instead of the top plug when putting in their release paper. That's fine. Do it that way if you wish. I have made some that way too, and they are a little quicker to make, but I worry that some way when I am merely storing queens that the bottom plug will fall out. Not that I have heard one has. I am just not very trusting. You know that's an application of Murphy's law.

Now one other matter — I mention I use the long cage for storing queens. The way I do that is I check a colony without smoke so the queen does not run. I locate the queen or where I presume she is because of her eggs. Then I count over at least two and preferrably three frames from where the queen is laying and slip one or more (up to six) cages with wooden top plugs, space an inch apart, between the frames which I think pretty much should have brood in them. What normally happens is the bees apparently happily feed the queens for months. In fact I might say that generally the queens are OK until the cluster in winter moves away from the stored queens. I know survival of stored

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virgins is lousy, and I feel that queens must have been laying at the time they were put in the long cages or laying when shipped by the breeder. You wonder how successful this is. Well, I have had perhaps two hives which killed all the stored queen practically at once. Two sets of queens out of, I am sure, over a hundred replications is not bad. Friends and I have also encountered a situation where for some unexplained reason say of five or six queens house bees will feed all but one or two. This should not be unexpected. Individual queens in normal queen banks are sometimes neglected too as any volume queen breeder will tell you. Fortunately that does not happen often, and I think occurs when young queens are mixed with old queens which I always save when I annually requeen.

There is another way you can lose stored queens. Say you have six live queens in a line. Say too you remove all at once and then instead of putting each queen back in the identical space from which you lifted her cage you change locations. For instance you put them back in reverse order. In other words you place them back 6,5,4,3,2,1 instead of the original 1,2,3,4,5,6. That gets queens killed much of the time because I surmise that a small group of bees sort of adopts as their own a particular queen, and when you swap locations they either kill her or ignore her as an intruder. Am I right about this? Who knows?

Another way to get stored queens killed is to pick up one cage and then another. If you pick up the first cage at the body of the cage, you know, where the queen walks back and forth, you inadvertantly get some of the queen's pheromones on your fingers or gloves. When you then touch the body of the second cage, you transfer some of that odor to the second cage. The bees recognize the change in smell of the second queen and, again, will kill or ignore her. So? Hey, PICK UP LONG CAGES BY THE SUSPENSION WIRES IF YOU HAVE QUEENS STORED IN THEM.

While on this pheronome subject, let me tangent off for a moment. Say you want to go to the bee yard to mark queens. If after you mark the queen in one hive, you go to the second hive and pick up a queen and mark her too. If you have not sprinkled a little alcohol on your fingers and rubbem them together to nullify the pheronomes of the first queen, you transfer the pheronomes of the first queen to the second queen and you radically change her scent. Very often then when you put the second queen back in her hive the bees ball and kill her or tear off wings, legs, etc. . . . Remember a queen marking set must contain not only paint but also an alcohol bottle. That is imperative.

Now the matter of the worth of queens stored often for months. Does long storage period hurt the queen? Maybe it does but I have worried about that so I have looked hard but I have never observed any difference in laying capacity between stored queens and not stored queens. Maybe Dr. Waller or someone has some ideas about this and will make appropriate comments. I at least would welcome any because there may be some unobserved deteriorating.

Now about the success ratio of queens introduced in long cages? It is my opinion, shared by others incidentally, that queens introduced in long cages have at least as high a success ratio as queens introduced in mailing cages. Frankly, I and others think the success ratio is appreciably better, but I do not run enough colonies that I could run meaningful comparisons. Maybe someone else has input in this area. If so please write me or the editor.

While on the subject of introduction, I have had hives that repeatedly would kill queens I was trying to introduce. I have tried long cages, Chantry type cages both home made and commercially made, and I'll tell you one can get real up tight when a colony kills two or three or four expensive breeder raised queens either in their cages or immediately after release. As a result now when a breeder raised queen is killed, the next queen or queens come from my supply of stored queens. Then if I still want a breeder raised queen in those occasionally ornery hives, I will try again with one when a stored queen has been in the hive long enough so that the initially hostile bees are all hatched out and died. I also have a modification — instead of using paper to release a queen I am likely to use a pivot plug with a piece of monofiliament fishing line tied to it. The way I do that is I put the queen in and at the end of a week to nine days I go in to the hive and very carefully remove all queen cells and close up the hive again. Then two or three days later I go to the hive and without opening the hive I pull on the monofiliament line part of which is hanging from the front or rear of the hive depending on how the pivot plug is placed. After a slow gentle tug, the top of the cage is open and the queen walks out. That generally works. Another alternative I use is combining a nuc initially set for a week or two above the hive to be requeened. I find that the hive odor of the nuc held on top of a large area double screened introduction board permeates the queenless lower hives so combining the hive and nuc occurs without fighting. With a very hostile-to-introduction hive without the prior transfer of odor often causes a slaughter of thousands of bees and death of the nuc's queen as you have probably observed.

I guess that is about it except for an amusing and ironic little detail. For years I called the long cages Worth cages. Then just for fun and out of curiosity when I was ordering other merchandise from Thorne's in England I ordered a Worth cage. Yikes, they are not the same. They are too thick, the screen is soldered at the wrong place, and the lower plug is not a solid plug but is sort of a Chantry type plug which is difficult to fill. Interestingly the queen excluder for the Worth cage plug is a staple. Hey, how about immortalizing me by calling the long cages Thurber cages. It would do a world of good for my ego.

Oh Oh! The beekeeper in the family says I am not through. She says tell the advantages of the long cage. OK! 1. If a bee wants to hassle a queen, the queen can walk to the other side of the cage. Then the hassling bee has to walk around the cage to continue. Apparently their attention span is too short for much of that. 2. I have observed that queens walk around, get exercise, and are fed, it seems, by many more bees than a queen in a Benton cage or normal Chantry cage. This gets her pheronomes around quicker. 3. The 8 mesh makes it easier for bees to lick and groom the queen than through the 12 mesh in Benton cages. 4. You do not have to have candy on hand to replace candy in cages where most has been eaten by attendants while the cage was in transit. 5. The long cages are easier to sterilize before reusing than Benton cages. Reusing unsterilized Benton cages can give the queen diseases the most likey of which is Nosema. I wash my long cages in hot soapy water regularly.

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**BEE TALK**

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two colonies on the original stand, should be done as soon as the summer flows are over, which would be early or mid-August around here. That will give you a strong colony to build up on the fall flows and come through the winter good and strong.

And there you are. That's the basic shook swarm system of intensive beekeeping. It should be used only for comb honey or cut comb honey, to get lots of beautiful white, well filled sections. There is no point in raising extracted honey that way.

Next time I'm going to explain some of the modifications other beekeepers have tried, and their results.□

# Management Tips

## Removing Bees

If bees are reluctant to leave extracting combs when using a fume board, due to lack of sun and warm temperatures, plus strong winds really bother too, I carry supers to my vehicle tires, lay a cover or other article on ground to catch bees. then I grasp super just below center on both sides and bump super on top edge of tire quite rapidly, turn super around and bump other edge, you can remove every bee this way. Then carry bees on ground back to hive so you don't run over bees with the tire, as they like to pile up and are in no hurry to return to hive. **Bob Adames, Box 38, Hazel, SD 57242.**

## Comb Honey

For the hobbyist who would like a little comb honey the following idea has been used for several years. I use a deep super for surplus honey. In the deep super I put two or three shallow frames in between them. The bees will draw out comb underneath the shallow frames and fill it with honey. All you have to do is cut the comb honey off and use. It is a beautiful sight to raise up a frame and see the comb honey all ready to use. **Pastor Carlton Cockey, 2 Crystal Avenue, Derry, NH 03038-2497.**

## Vermont Beekeepers Association Winter Meeting

The following item of interest concerns the recent Vermont Beekeepers Association winter meeting held January 27, 1984.

There was a very good turn out of about sixty members even considering the weather was one of the worst snow days of the year.

The photograph shows David Ambrose, President of the Vermont Beekeepers Association on the left presenting to Michael Palmer the 1983 Vermont Beekeeper of the Year Award. Mike was cited for his efforts in formulating a new apicultural law this past year, his work on the Vermont Honey Promotion Board and for winning three top prizes for quality honey at the summer meeting of the Eastern Apicultural Society held this past summer at the University of Maine in Orono. Mike is a commerical beekeeper from St. Albans, Vermont.


**The BAY QUEEN**

## 1984 EAS Conference

A touch of romanticism has been included on the itinerary of the 1984 Eastern Apicultural Society (EAS) Conference Aug. 8-11 at the University of Rhode Island in Kingston.

The Rhode Island Beekeepers Association (RIBA), conference hosts, has planned a moonlight cruise for early arrivals on Wednesday evening on one of the state's finest natural resources — Narragansett Bay.

Those selecting the cruise will board the "Bay Queen" for a 4½ hour memorable adventure. The ship is 125 feet long and has three decks for unexcelled sightseeing.

Sightseeing, however, is only a microcosm of the entire evening. The cabaret-style cruise will also include dinner and dancing.

Once under way, a buffet of hot hand-carved roast beef, ham and turkey with fixings will be served.

A musical group will also be aboard to provide music for listening and dancing pleasure. Couples can gain an unforgettable experience by climbing to the top deck to dance beneath the stars.

As the ship sails its way down the bay, those aboard can marvel at the shimmering lights along some of the state's 400 miles of coastline. Passengers will also glide by several islands that dot the bay.

The ship will enter Newport Harbor, the seaside parking lot of the City by the Sea, playground of millionaires. During the summer months, the harbor is a virtual cornucopia of magnificent yachts, and passengers will be afforded an evening look at the Sheraton Islander, home of the EAS banquet on Friday night.

During the cruise, the ship's captain will offer commentaries on the bay's history and points of interests.

A word of caution, however. The cruise will be limited to 350 passengers, and reservations will be accepted on a first come, first served basis.

Those desiring to be included on the 1984 EAS mailing list, and receive an advance copy of the registration form, should send their name and address to: EAS 1984 Committee, 107 Chatworth Rd., North Kingstown, R.I. 02852.

## News from IBRA

Dr. Eva Crane, who has been the Director of the International Bee Research Association since its foundation (as the Bee Research Association) in 1949, retired at

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the end of 1983 after 35 years of service. She will continue to be associated with IBRA as Scientific Consultant to Council.

Dr. Margaret Adey became the new Director on January 1st. After taking an Honours BSc degree in Environmental Sciences, Dr. Adey carried out research for her doctrate on plant-pollinator relationships in brooms and gorses, making observations on the activities of wild bees and honeybees. An account of some of this research will be published in no. 2 *Bee World* 1984, of which Dr. Adey will herself be the editor.

Dr. Adey worked at field sites in a number of European countries, where she acquired a working knowledge of French, Italian and Spanish, and extended her beekeeping experience. She herself started beekeeping over six years ago, and in December 1983 she spent a month in tropical Africa in order to familiarze herself with the beekeeping situation there.

Margaret Adey ahs latterly been a Postdoctoral Research Fellow at Southampton University, where she graduated, on a computer-based Vicieae Database Project. This was created in 1979 as anf information center for economically important species of vetches, peas and beans, and is funded by the UK Science and Engineering Research Council.

## Southeastern Beekeepers Club Middletown, NY 10940

The Southeastern Beekeepers Club of Southeastern, NY would like to announce their annual banquet Saturday, April 28, 1984, starting at 6 P.M. at the Goshen methodist Church, Goshen, NY. We are proud to have as our featured speaker Dr. Roger Morse, Professor of Apiculture at Cornell University and Research Editor for *Gleanings*. His timely topic will be the Varroa disease. The dinner will feature Roast Beef and the delicious Broccoli Casserole. There will be door prizes, gifts and other entertainment. For further information and reservations, contact: Kathy Smith, P.O. Box 121, Cuddenbackville, NY 12729, 914-754-8970.

## Northern New York Beekeeping Seminar

The William H. Miner Agricultural Research Institute will be sponsoring its 6th annual Beekeeping Seminar on Saturday, April 28th, 1984. The meeting will be held at the Miner Center auditorium in Chazy, New York from 8:30 a.m. until 3:00 p.m.

Guest speaker will be Dr. Clarence Collison from Pennsylvania State University. He will be speaking on a variety of topics including "Factors Effecting Colony Buildup in the Spring", "Pollination, The Need Justifies the Return", and "Honey Bee Biology".Dr. Collison will be assisted by Dick Crawford, President of the Champlain Valley Beekeepers' Association, and Loretta Surprenant of Miner Institute.

In the afternoon there will be demonstrations for both beginners and advanced beekeepers. the demonstrations will consist of evaluating brood patterns, removing honey from the colonies, how to prepare honey products for a honey show, and beekeeping equipment and supplies needed to start beekeeping.

Demonstrations will take place in the apiary. Please come properly dressed. (Veil, bee suit, etc.)

Space is limited and we ask that you register early. Registration fee is $5.00 and this will inclue the cost of lunch. For more information, please contact Loretta Surprenant, Miner Institute, Chazy, New York 12921 (518) 846-8020.

## Northeastern Indiana Beekeepers Association

The Northeastern Indiana Beekeepers Association will hold its 5th Annual Bee Market on May 12, 1984 at the 4-H Fairground in Auburn, Indiana. Free beekeeping classes begin at 9:00 a.m. Numerous bee supply companies and private individuals will be showing and selling their wares. Admission is free. An auction of donated items will be held.

## State of Minnesota Dept. of Agriculture 90 W. Plato Blvd.

Minnesota has new regulations pertaining to movement of honey bees and bee equipment.

There are separate requirements for:
— Bees on Comb or used bee equipment
— Combless bees (queen shipments, packages, etc.)

A. Entry Permit is required before a person can bring bees, on comb, or used bee equipment into Minnesota.

1. The person wishing to bring such bees on comb or used bee equipment into the state must apply for an entry permit at least 60 days before date of entry.

2. The person applying for an entry permit must supply the following information:

a. State of Facts — Disease History

b. List of Locations

c. Statement of any convictions

3. The person applying must also provide, ten days before entry, a copy of a valid Certificate of Inspection signed by a responsible official of the state where bees, on comb, or used equipment originated.

B. Combless bees and nuclei (packages, queen bee shipments, etc.) have special requirements for movement into Minnesota.

The following must appear clearly and legibly in a conspicuous place on the package containing the shipment, or on a tag or other device attached to the package or vehicle carrying the package:

1. Name(s) and address(es) of the consignor(s) or shipper(s)
2. Name(s) and address(es) of consignee(s) or person(s) to whom shipped.
3. Locality (state) of origin of shipment.
4. A Certificate of Inspection signed by an official from origin state.

Please note that an entry permit application, statements, etc., are not required for combless bee and nuclei shipments.

C. Enforcement of new Apiary Statute

Please note any person who violates these entry requirements or any other provision of the new Apiary Statute is guilty of a misdemeanor in Minnesota and may be subject to further legal actions.

For further details contact the address given above.

## Alabama Beekeepers

Officers and directors of the Alabama Beekeepers Association, elected at the organization's annual meeting held at Auburn University, are: George H. Blake Jr., Auburn, president; Frank Randle, Auburn, vice-president; Coralyn Harrell, Haynesville, secretary; and R.V. Harrell, Hayneville, treasurer. The directors are: Douglas Harbin, Theodore; Andy Webb, Calvert; David Griffith, Dadeville; Luke

CONTINUED ON NEXT PAGE

Varden, Birmingham; J.L. Sims, Rainsville; and Virgil Vaughn, Huntsville. About 450 commercial and hobbyist beekeepers are members of the association.

## The Newsletter On Beekeeeping

Beginning in March, *The Newsletter on Beekeeping* will be available quarterly to anyone interested in receiving it. The editor of the new publication will be Dr. Elbert R. Jaycox, who wrote the popular *Bees & Honey* while at the University of Illinois. That newsletter was discontinued in 1981. Dr. Jaycox plans to continue with the same style and general content as before, with some changes to reflect his new location and work in the Southwest.

Initially, *The Newsletter on Beekeeping* will be distributed quarterly without charge. It is expected that a modest subscription fee will be required later, and the newsletter will be published more frequently at that time.

To receive the newsletter, send your name and address to: *The Newsletter on Beekeeping*, Dr. Elbert R. Jaycox, Box 3BE, New Mexico State University, Las Cruces, NM 88001. Indicate that you wish to receive the newsletter.

## Fourth Annual Colony Management Course Set For Greenwich, NY

A special beekeeping course on Basic Colony Management will be conducted at Betterbee, Inc., in Greenwhich New York on Friday April 20 and Saturday April 21. This is the fourth year that this program has been offered, and it will again be instructed by Dr. Larry Connor, Director, Beekeeping Education Service.

Class sessions will be split between lecture-demonstrations, using Dr. Connor's extensive slide collection, and hands-on experience with bees in the Betterbee apiaries. The course has been timed to coincide with package bee arrivals from Georgia, and with timely seasonal activities. Colonies will be inspected, equalized, increase colonies made, nuclei pulled, and double-screen colonies established. Lecture subjects will include basic bee biology, a review of life in a bee tree, and disease recognition.

Beekeepers may enroll for one or two days, but should pre-register by contacting Beekeeping Education Service, P.O. Box 817, Cheshire, Connecticut 06410 or phone 203-271-0155. The fee is $25 for two days, or $15 for one.

A companion course on Intermediate Colony Management will be conducted on June 2 and 3 and will concentrate on honey production, queen use, stock evaluation, marketing concepts, and related subjects.

## Intermediate Field Course Set For Western Connecticut

A limited enrollment field course for established beekeepers is being developed by the Fairfield County Extension Service and Beekeeping Education Service. Participants will attend limited lecture sessions and visit various local apiaries to view demonstrations of timely colony manipulations. Colonies will be selected for a variety of conditions and strengths.

Dr. Larry Connor will coordinate and instruct the course, which will be limited to under 20 individuals to allow close-range viewing and active participation.

Tenetative dates for the program are Saturday April 7, Sunday April 29, and Saturday May 19. Apiary locations will be in the western Connecticut and New York state areas around Danbury.

To reserve a position in the class, preregister with Dr. Connor at Beekeeping Education Service, P.O. Box 817, Cheshire, CT 06410. Phone 203-271-0155. The course fee will be between $50 and $60, and will include selected reading materials.

Glenn Gibson, Executive Secretary of the American Honey Producers, receives from the Iowa Honey Producers Association, a plaque recognizing his outstanding contributions to the industry.

## GBC MAILBOX

CONTINUED FROM PAGE 211

2. Take honey out of the commodity business by differentiating between types of honey. We must emphasize honey's great variety and uniqueness. We can't do this without a set of definitions, defining what the varieties are. We must have a set of enforcable label and honey standards so we can shed ourselves of the cheats who permeate our industry.

**Jim Powers**
**Powers Apiaries**
**Box 327**
**Babson Park, FLA 33827**

### For Bee Stings

**Dear Editor:**

For bee stings Boric Acid Ointment cost about a dollar for a tube at the drug store and does it work. About 10 times better than Adolph's meat tenderizer. Also has the advantage of staying on longer. If used with a band aid right after a sting its a sure cure in 15 mintues unless it's really a bad one. Can also be rubbed over a large red area of a neglected sting. Fantastic! Have been using it for 35 years for cuts and bruises but never tried it on a bee sting until last spring. If you know of anything better let me know.

P.S. Great Magazine!

**Trent S. Milliken**
**307 E. Madison Ave.**
**Cape Canaveral, FL 32920**

# BUY & SELL

Classified rates: 49 cents per word, each insertion, payable in cash in advance. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) count as one word. Not less than 10 words accepted. Copy or cancellation orders MUST be in by the 1st of the month preceding publication. Send classified ads to the A.I. Root Company, Advertising Dept., GLEANINGS IN BEE CULTURE, Box 706, Medina, Ohio 44258-0706 **Note: BLIND ADS: Any ad sent in that does not contain the seller's Name and Address within the ad, will be charged an additional $6.50 per month.**

## MAGAZINES

THE AMERICAN BEEKEEPING FEDERATION needs your support! Join in supporting efforts to stop adulteration, to improve marketing conditions and to encourage the continued research on African Bees and Varroa and Acarine Mites. Send for information, membership application and sample copy of bi-monthly News Letter! Write To: **THE AMERICAN BEEKEEPING FEDERATION, INC., 13637 N.W. 39th Avenue, Gainesville, FL 32606.** TF

THE SCOTTISH BEEKEEPER — Magazine of The Scottish Beekeepers' Association, International in appeal. Scottish in character. Membership terms from A. J. Davidson, 19 Drumblair Crescent, Inverness, Scotland. Sample copy sent, price 20 pence or equivalent. TF

The INTERNATIONAL BEE RESEARCH ASSOCIATION urgently needs your membership and support to continue its work of publishing informatin on bees, beekeeping and hive products. Write for details about publications and the benefits of membership to USA Representative, H. Kolb, P.O. Box 183, 737 West Main, Edmond, OK 73034 (phone (405) 341-0984); or to IBRA, Hill House, Gerrards Cross, Bucks SL9 ONR, UK, regularly publishes new information on bees, beekeeping, and hive products, for beekeepers and scientists all over the world. Mail inquiries from USA: H. Kolb, P.O. Box 183,, 737 West Main, Edmond, OK 73034, Phone: (405) 314-0984. IBRA PUBLISHES: **Bee World,** a quarterly journal for the progressive beekeeper. **Apicultural Abstracts,** a survey of scientific literature from all languages. **Journal of Apiculture Research,** for original bee research papers. Books and pamphlets on all beekeeping topics. Catalogues of publications and details of journals and membership $1. Specimen copies of **Bee World**; **Journal of Apicultural Research** or **Apicultural Abstracts** from INTERNATIONAL BEE RESEARCH ASSOCIATION, Hill House, Gerrards Cross, Bucks. SL9 ONR, England. TF

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

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. TF

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

BEE CRAFT — Official (monthly) magazine of the British Beekeepers Association. Contains interesting and informative articles. Annual Subscription $5.10 (Surface mail) and $7.10 (Airmail). The Secretary, 15 West Way, Copthorne Bank, Crawley, Sussex, RH10 3DS TF

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

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

## WANTED

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

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

Wanted: Hardworking Full-time professional queen breeder. Must have many years experience in all phases of queen production as well as other general apiary work. South Atlantic state location. Salary negotiable. Contact: Huck Babcock, P.O. Box 2685, West Columbia, SC 29171. Phone: 803-256-2046.TF

WANTED: Used insemination device in good condition and priced right. Albert Bradley, Rt. 1, Box 364, Troy, Mo. 63379 4/84

POLLEN (good tasting), PROPOLIS (clean), ROUND COMB, EXTRACTED HONEY. SAMPLES PLEASE! Moon Shine Trading, P.O. Box 896, Winters, Calif. 95694 6/84

Wanted: Old or unusual honey pots, dishes or plates with bees or skeps on them. Also old or unusual skeps, smokers, beehives and jumbo hives. Send price, picture or discription to J. Steed, P.O. Box 115, Richmond, KY 40475. 6/84

WANTED — Plate No. one in the the Beekeeping series of Porcelain by Patricia. Write: Lou Farrington, Rt. 1, Red Oak, Iowa 51566. 5/84

## FOR SALE

Protective Clothing for Beekeepers. Write now for brochure. B. J. Sherriff, Dept. GBC P.O. Box 416, Nacoochee, GA 30571 TF

INSEMINAION DEVICES. For prices write Otto Mackenson, Box 1557, Buena Vista, CO 81211 TF

HIVE MONITORING STETHESCOPE
SPECIAL DESIGN
OVER-WINTERING or SPRING BUILD-UP
YOU SHOULD BE LISTENING
$9.95
PKECO, Dept. C, P.O. Box 448,
Louisville, KY 40201 7/84

For Sale — Bulk Pollen. Minimum order 300 lbs. 208-896-4552. 12/83

COMBAT BEEKEEPING IGNORANCE WITH CONNOR'S TWENTY EDUCATIONAL SLIDE PROGRAMS. Box 817 Cheshire, Connecticut 06410. TF

For Sale: 250 strong bee hives and equipment. Carroll Couture, Belleville, KS (Northcentral Kansas area) 913-527-5805. 4/84

**FOR SALE: Top quality Italian bees and queens since 1940; also 3 frame nuclei and single story colonies. Bring your cages and save. WALKER APIARIES, Rt. 1, Box 34-B, Rogers, Texas 76569. Phone: 817-983-2891.** 6/84

For Sale — 1,000 colonies of bees. 8-frame hives plus extra supers with combs. Jelinek Apiaries, Fillion, MI 48432. Phone: 517-874-4355. 5/84

500 Single Story Hives of Bees. Available April 15, 1984. $4.00 each. All or Part. Contact: Tom Hubbard, P.O. Box 416, Belleview, FL 32620. 904-245-2461. 4/84

FOR SALE — 250 10-Frame story and a half. Young queens in good condition. G.C. Maxwell, Pamplin, Va. 23958. 4/84

For Sale: 1200 deep supers—drawn comb. Carroll Couture, Belleville, KS 66935. Ph: 913-527-5805.4/84

**For Sale: 2,000 excellent brood chambers. 9⅝.** 3,000 supers $8.00. Minn. 507-778-3307. 4/84

For Sale: Frame Spacing Tools, fast and easy to use. A pair works faster. Eliminate costly nail in spacers. ½" aluminum alloy. When ordering — specify 8 or 9 frame. 1-$9.65 ea., 2-$9.45 ea., add $1.80 shipping. Wolf World Products, Box 707, Baldwin, WI 54002. 7/84

**For Sale: 1958 Peterbilt cabover with 40 ft brown flatbed trailer. Both in excellent condition, ready to move bees. $15,000. Lean Dolence Apiaries, Route 1, Box 60, Ronan, Montana 59864. Call (406) 676-5043.** 4/84

For Sale: 1975 Chevy C65 ten wheeler. 22 ft. flatbed. $8500. Lean Dolence Apiaries, Route 1, Box 60, Ronan, Montana 59864. Phone: (406) 676-5043.4/84

For Sale: 10 Frame Equipment
3,000 6⅝ **supers — 9 Fr. ea.; 1,000 9⅝ supers — 8 or 9 Fr. ea.; 1 Cook & Beals Uncapper, 1 Cook & Beals Spin Float Wax Separator, 1 Moyna Honey Pump — Stainless Steel, 2-3,000 gal. Stainless Steel Tanks, 1 — 300 gal. Stainless Steel Tank, Hand super carts, Hand barrel carts, Knox Bee Blower, Various other bee related equipment. Gerry Kunkel, Rt. 2, Baraboo, WI 53913. Phone: 608-356-7038.** 4/84

60 2-story hives, 300 deeps, 325 mediums, 200 tops & bottoms, Cowen mini-uncapper, extractor, sump tank, pump, wax melter, blower, stapleguns, **More**. Excellent equipment. Steven Bengtson, 612-331-4558. 4/84

Bee Hive Filing Cabinet — drawers constructed to look like deep supers. Send $2.00 for plans. Harry Meyer. 11398 Baird Rd.. Amherst. Ohio 44001 4/84

16 3-stories healthy Italian Beehives for sale. Telephone 516-48-6-3992. J.G.R. 4/84

Four Frame nucs and singles available early in May in north-central Illinois. Tanners Orchard. Speer. Illinois 61479. Ph: 309-493-7781 or 309-493-5442. 5/84

For Sale: 5 Frame Nucs and single story hives. West Central Wisconsin. Call Marqson Company 612-934-3168 or 715-262-2633. 4/84

**FOR SALE: 300 strong hives, 10-frame equipment. Palletized State inspected. 900-6⅝ supers with drawn comb. Top quality through out. Available May 20th. Clyde Vieth, P.O. Box 284, Umatilla, Oregon 97882. Phone: 503-922-3936. 4/84**

**For Sale: 40 strong bee hives two story plus extra supers. Doug Ketterman, Astoria, Illinois 61501. 309-795-4582 4/84**

For Sale: Standard 10F dovetail equipment in excellent condition. 150 brood chambers. 100 deep supers. 50 bottoms and covers. plus other misc. Priced to sell. Mike Schwartz. Fall Creek. Wisc.. 715-877-2656.5/84

100 2 story 10-frame deeps. Good Equipment. Disease free Italain Bees. Good Producers $65.00 each. James L. Weimer. Vancouver. WA 98662 4/84

Black Locust ast little as 7 cents each and other trees. Cold Stream Farm (616) 464-5809. 5/84

100 single-story hives for sale. 1984 queens in Florida or central Pa. Allen Wagner 904-394-4874. 4/84

FOR SALE: Bee Operation on 15 acres. 14' x 60: wood frame building on cement. Also 20' x 30' storage shed. Excellent line of equipment plus 500 hives. 25 yard sites available mostly on Sweet Clover. Call 873-5900. Renaud Realty. Box 416. Tisdale. Sask. SOE ITOTF

For Sale: 1,000 SUPERS. excluders. pallets. Cowen uncapper. Bogenschutz. dovetail saw. 45 frame extractor. 300 shells. Covers. 608-924-3255 days. PSHF 5/84

For Sale— Complete processing equipment used for manufacturing bee comb foundation of beeswax or sag-proof wax coated aluminum. Foundation rollers are of bronze ring construction. correct angle cell base. This processing equipment was designed and used by Alan Eby for Hyland apiaries. West Elkton. Ohio. Building and honey filter also for sale. For appointment call 616-323-6633. EAE 5/84

For Sale: Small bee business located in Blair. Oklahoma. Approx. 130 hives. Complete set up. 405-563-2723. Chuck Goodwin. 4/84

4 FRAME NUCS FOR SALE: $30. no frame exchange. Mid-Wis. pick up. Info contact Dave Marcy 715-445-2299. Ogdensburg. WI 54962. 4/84

For Sale: 100 two story colonies with locations if desired. Equipment in good condition. Will sell part or all. Ralph Wischmeyer. Ottawa. OH 419-523-4145.5/84

For Sale: 300 two sotry colonies. Queen rearin outfit. 69 two ton truck. Kelly loader. good honey outlets. Best offer. Andrew Hutchison. P.O. Box 6993. Boise. ID 87707 TF

20' dual axel trailer excellent condition built for hauling bees $2200. 400 gal. stainles jacketed tank $400. 3-frame NUCs 10-up $25.00 ea. E.A. Jones (804) 736-9885 Virginia 5/84

Carniolan and Italian queens $7.50. Golden yellow Italians $10.00. Pay in advance. Lester Selph. 2502 Winton Rd.. Durham. N.C. 27707. (919) 489-95616/84

20 colonies. good strain honey bees. 200 new unpainted 10-frame size hive covers. Phone: 419-846-3746. Hugh W. Palmer. 10026 Overton Rd.. Burbank. Ohio. 4/84

100 colonies 1½ stories 8pframe. All or part SW Idaho. Allen Schiepan 208 467 2377. 4/84

100 colonies. complete operation. s.s. extracting equipment. Metamora. MI. Dana Mason 313-797-4313.4/84

For Sale: 200 colonies 3 deep on pellets. Pullen self-loading extractor. 900 6⅝ honey supers and some deep brood supers. Blaeter 715-832-1690. 4/84

For Sale: 250 strong 2-story bee hives. Also. 1200 deep supers. drawn comb. Carroll Couture. Belleville. KS 913-527-5805 5/84

For Sale: New and Used Bee Equipment. 10-Frame. Enough for approximately 200 hives. Rt. 1. Box 438. Poplar. WI 54864. 715-364-2721. TA 4/84

For Sale: 2500 9⅝ Deeps with 8 combs. 2817 5⅝ shallows with 8 combs. good paint & repair. 5000 creasoted standard bottom boards. 2 Meyers E-Z Loaders with single and double wide mast. Two 14 fool Magnesium ramps. Artesian Honey Producers Inc. Box 6 Artesian. South Dakota 57314. 605-527-2423. evenings. 605-527-2318 6/84

100 Hives Bees. $50 each. Larry Massey. Rt. 2. Section AL 35771. 205-228-6772. 4/84

# BEES & QUEENS FOR SALE

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

Nucs 4-frame Golden Italian stock $35.00 each or 3 for $100. Queens $5.00 each. All postpaid. Small orders only. Johnny Pennington. 194 Cooper-Hurst Rd.. Pearl. MS 39208. Phone: 601-939-5994. 5/84

Package Bees — April 1 to May 10 pickup in Northeast Texas. Charles Engle. Wolfe City. Texas 75496 214/496-2223 4/84

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

Colonies for sale in Florida. Call Evenings only. (904) 567-9495. No Collect Calls. Terms Negotiable. TF

MICHIGAN BEEKEEPERS. I will be hauling package bees from Georgia again this spring. For prices. dates and information call Don Reimer at 517-695-9031 4/84

Royal Queens. Champion Nucs. Prime Cells. Bruce and Jeannie Otte. Rt. 2. Box 99-A. Karnes City. Texas 78118. (512) 780-3521. 5/84

PACKAGE BEES delivered to Wisconsin near Green Bay. Eau Claire and my home. Ronald Hazard. RT 2. Poynette. Wis. 53955. Phone: 414-992-3217. 4/84

**PACKAGE BEES 2 lb.—$20.00, 3 lb.—$26.00. LAPP'S BEE SUPPLY CENTER 414-648-8409. REESEVILLE, WI 53579. 4/84**

I will be bringing package bees back from the South this spring. end of April. 3# $27 with queen. Italian. Also have a good supply of Walter T. Kelly Wax. William Wilson. R.1. Fredericktown. OH 43019. 1-614-694-2318. 4/84

NORTHEAST BEEKEEPERS — Discount Prices on Package Bees. Nucs. and Queens. We Mfg. Woodenware. Buy Direct for the Lowest Factory Prices. Dealer's Quantity Discounts. Seaver's Beeline. 48 Wetsel Rd.. Troy N.Y. 12182. 518-235-1068. 4/84

Italian Package Bees with Queen. Picked up at Apiary $22.00. Postage $4.00. Hardy Stock. Shipment begins April 15th. Contact Laird Lewis. Tripple L Bee Farm. Rt. 2. Box 253-A. Preston. Md. 21655. Tele— 1-301-673-7490. 4/84

3 Frame Italian Nucs. 84 queens. $30.00 Postpaid. 3 for $85.00 Extra Queens $6.25. Box's Better Bees. 410 N. Lide. MT. Pleasant. Texas 75455. Phone: 214-572-0428. 5/84

Up to 90 colonies of bees. $60.00 before pollination; $50.00 after. Singles less. Thistle or basswood honey taken in part trade. Fredrickson. 1103 W. 32nd St.. Holland. Michigan. (616) 355-3808. 4/84

# BEE SUPPLIES FOR SALE

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

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

BEE EQUIPMENT MANUFACTURERS. Supers ends rabbet-jointed for added strength and durability. Our frames are one of the best on the market. All beekeeping supplies at commercial prices. Write or call for price list.MONCRIEF BEE SUPPLIES. Post Office Box 625, 1105 Lakewood.Lakeland. FL 33802. (813) 858-6754. TF

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

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

RADIAL HONEY EXTRACTORS-5 and 10 frames. Patented. factory made of stainless steel. GAMBLE'S HONEY EXTRACTOR CO.. P.O. Box 7997. Greensboro. NC 27407. Phone: (919) 299-3973. Day or Night. TF

HONEY EXTRACTORS FOR HOBBY BEEKEEPERS — Affordable Prices. FREE Literature. BEE LINE MANUFACTURING. 1019A Saint Elmo. Austin. TX 78745 TF

5-Frame Nucs — single story hives — 2 lb. packages — 2.000 6⅝- 10-Frame supers with drawn comb $12.00 each. Complete line equipment and supplies. Wolf Bee Supply. P.O. box 707. Baldwin. WI 54002. Phone: 715-684-2095 or 715-246-5534 4/84

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

SURPLUS STOCK — NEW FRAMES W/DURAGILT. COMB STARTER — READY TO USE. 4000 6⅝". $.65 EACH; 2000 9½:;, $.75 EACH. R. Dodge. BOX 388. LESLIE. MI 49251. (517) 589-5542. 4/84

Supers in excellent condition. 2700 deep supers 9⅝; 9 frames; 150 new complete section supers; 600 telescoping lids; 700 treated bottoms; 15 drum holding tank. 2 Kelly clarifiers. U.S. Vacuum bottler. Dennis Hanson. 608-735-4428. 4/84

**PINE BEE SUPPLIES**

9-5/8" hives dovetailed **$4.00** each
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Select grade heavy duty frames, all sizes
**$31.00** per 100 **$280.00** per 1000
Hoffman 9-1/8, 6¼, or 5-3/8 specify style
Powers super frames 6¼, 6 and 5½
Wooden lids and bottoms (migratory)
**$2.25** each or **$4.50** per set
Bee Pallets Cut To Order **$6.50** & Up
Foundation available — plain or wired
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Allow manufacturing time on all orders
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Free Beekeeping Supply Catalogue
Quality products at competitive prices
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Austin, Texas 78728
(512)-251-3823
10/84

Radial Extractors, 5 and 10 frame. Stainless steel factory made, patented. Gamble's Honey Extractor Co., Dept. A, P.O. box 7997, Greensboro, N.C. 27407. Ph: (919) 299-3973, 5-10 PM Weekdays, anytime on Saturday. TF

Temperature controlled ventilators, uniting boards, ventilating inner covers, pollen traps with 200 square inches of screen area. (My conical bee escapes/boards are now available in U.S.A. at all Root dealers). Free information. V. Shaparew, 3371 Trafalgar Road, R.R. #1, Oakville, Ontario, Canada, L6J 4Z2. 2/85

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EXPLOSIVES MAE EASILY, CHEAPLY FROM FARM FERTILIZER. Blast dugouts, stumps, rocks. Instructions $3.00. DeFost, 925 Bradshaw, Prince Albert, SK, CANADA S6V 2P3. 4/84

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## SEEDS

Mixed Sweet Clover seed, 50% white, 50% yellow. 10 lb. — $7.50 plus U.P.S. Innoculent $1.50. Visa or Mastercard. Higgins Apiary, 3801 U.S. 50, Hillsboro, Ohio 45133. Tel. 513/364-2331. 5/84

HONEY PLANTS AND BEE-BEE TREES. OUR SPECIALTY. SEND STAMPED ENVELOPE FOR CATALOG. ARLETH'S APIARY GARDENS, 395 CAROLINA ST., LINDENHURST, NY 11757. 5/84

## POLLEN

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

OZARK MOUNTAIN BEE POLLEN. Excellent quality. Guaranteed pure, pesticide-free. One to three pounds, $7.70/pound. Over five pounds, $5.75/pound. POSTPAID. Lloyd Ziegler, Box 108, Star 2, Ozark, Arkansas 72949. 4/84

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SPANISH POLLEN. Excellent taste and quality. 3 lbs. $22.00, 6 lbs. $39.00, 10 lbs. $54.00, 20 lbs. $100.00. Prices subject to change. Free UPS shipping. BLOSSOMTIME, P.O.B. 1015, Tempe, AZ 85281. TF

## ROYAL JELLY

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

PURE FRESH Royal Jelly, 2 oz. bottle, $19 pp.; 1 lb. $120. Prairie View Honey, 12303 12th St., Detroit, MI48206. TF

## BEESWAX

BEESWAX WANTED — Highest prices paid in cash or trade for bee supplies. The A.I. Root Co., Medina, OH 44256. TF

## BOOKS

**STRENGTHEN BEEKEEPING SKILLS and Save 25%. Beekeeping Basics Home Study Course, Regularly $39.95 now $29.95. Limited time only. Dr. Larry Connor, Box 817, Cheshire, Connecticut 06410. TF**

## POULTRY & WATERFOWL

BABY DUCKS, geese, chickens, turkeys, guineas, pheasants and bantams. Beautiful varieties are fun to raise and show. Color catalog, $1.00. HEART OF MISSOURI HATCHERY, Box 954-N, Columbia, Missouri 65205. 7/84

## HELP WANTED

Commercial Outfit needs hired help for the 1984 season. Golden Valley Apiaries, Rt. 1, Box 48, Fairmont, Nebraska 68354. 402-268-7521. 5/84

## HONEY WANTED

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

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

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

All Grades of Honey. Any quantity drums or cans. Call Toll Free 800-248-0334. Hubbard Apiaries, Inc. Box 160, Onsted, Michigan 49265 TF

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

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

WANTED — All grades of extracted honey. Send sample and price to MacDonald Honey Co., Sauquoit, New York 13456. Area Code 313, 315-737-5662 TF

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

## HONEY FOR SALE

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

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

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

HONEY for sale: Clover, Wild Flower, Alfalfa. Wholesale prices, 60 lbs. to truck load. Bee Pollen — 5 lbs. to 100 lbs. Call or write for prices. Glorybee Honey, Inc., 1006 Arrowsmith St., Eugene, OR 97402. Phone (503) 485-1649. 6/84

## SIFTINGS

CONTINUED FROM PAGE 214

This method also appears to be working quite well now in Brazil.

African bees do have some valuable characteristics. Their aggressive temperment is well known, and it also carries out through other more valuable traits. The Africanized queens lay twice as many eggs per day than the European queens. They collect five times as much pollen to feed the high birth rate. They are also more aggressive and work faster gathering both pollen and honey.

Theoretically, at least, it should be possible to develop the best characteristics of both races into a new hybrid strain of bees, and eventually develop a strain of bees better than anything we now have. Also, hybrid vigor would be incorporated and perhaps make them more resistant to disease. It may be that a hybrid might be developed that could also winter in the north. Many things may be possible but just how it will actually work out is another big question.

As for the Varroa mite, does it have a disease or predator or other natural control where the mite originated? As with the Acarine mite, chemical control of the Varroa mite is not satisfactory, is expensive and a lot of labor for only temporary control. With this problem and many others perhaps it is best that we ask Mother Nature how She solves them. After all, She does have a few million more years of experience than we beekeepers do!

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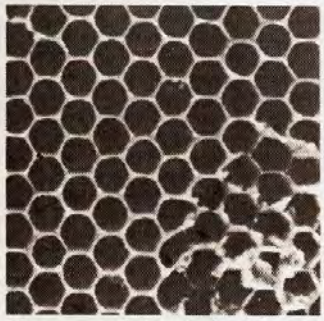
# GIVE WAX MOTH LARVAE THE TREATMENT!



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